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CHARLES LOUIS
ALPHONSE LAVERAN
ISSUE

June, 1950

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GUEST EDITORIAL

A Multi-phasic Screening Survey at Richmond

THE interest of the public in individual "health" examinations at its own expense has been sluggish in years gone by, although it apparently has increased in the past 20 years. We doctors may have failed to stimulate such interest partly because we, ourselves, are interested primarily in the cure of the sick and the alleviation of suffering. The interest of the public in such examinations at the expense of other people seemingly is much greater, although it seems likely that all such examinations are at the expense of the public indirectly either in higher taxes, if made through the public health agencies, or in the higher cost of goods and services if offered by private agencies, foundations or doctors. The pediatricians have persuaded the public, as have the dentists, that routine examination at regular intervals is worthwhile, but not many adults make such appointments with their family doctors for such service, although such is done at times. Life insurance companies do offer such a service to some of their patrons, and the Life Extension Examiners make such examinations on a large group of the insured population. The latter company has been paid by various life insurance companies, and the financial benefits in prolonged health and life about cover the cost of the examinations.

The tuberculosis agencies have developed general mass survey techniques for the detection of tuberculosis in the general population and the diabetic societies have carried on similar projects. The combining of these various efforts has interested many people, and it would seem that the time, cost and trouble would not be much greater in running a number of tests on people presenting themselves for such routine examinations. If too much is planned and attempted, it would probably be as time consuming and expensive as having the examination made by the family doctor and probably less effective in detecting and caring for the sick.

Furthermore, one needs to consider whether or not one is helping to conserve the health of the people. Granting that unknown cases of diabetes, heart disease, tuberculosis, etc., are found we still must consider the possible delay in the diagnosis of disease not detected. If a person is told by the clinic that they find no evidence of disease, he may ignore for many months symptoms which otherwise would have driven him to seek the services of his doctor. A patient may wait months for her turn at the Richmond cancer detection clinic before they tell her she has no evidence of cancer but that she should see her doctor for diabetes, thus substituting an expensive diagnostic work-up for a simple urinalysis and much earlier diagnosis.

About six months ago representatives of various organizations especially interested in the health of the people of Richmond and its visitors were called together. The Richmond Academy of Medicine, the Richmond Heart Association, the Virginia Diabetes Association, The Richmond Public Health Department and many other groups

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were represented. Dr. E. M. Holmes informed us that the federal government was interested in ascertaining facts about multi-phasic screening by which a large block of the ambulatory population would be tested quickly and simply for several chronic diseases, rather than by one test such as chest x-ray or a blood test for syphilis or a urinalysis, all of which has been done many times in the past.

This study was to be an investigative project in the true meaning of the word. Only two cities would be used, one as a check against the other. The federal government would supply the funds which we could supplement by equipment and personnel and possibly a small amount of money if desired. After due consideration this group decided to accept the offer and to formulate a program.

The final decision as to the tests and the details of conduction of the survey was made after receiving recommendations from various committees of people qualified in their fields of endeavor. A blank was drawn up and subsequently modified as seemed indicated. The procedure recommended was designed to have a receiving clerk to aid each patient in filling out necessary data such as name, age, occupation, and his doctor's name and address to whom the report was to be sent. The examination was to include a questionnaire about allergies now and in the past, height, weight, blood pressure, chest x-ray, blood tests for sugar, hemoglobin and syphilis and on some patients, an electrocardiogram. Intra-ocular tension and vision were considered and omitted, only to be accepted later. As the person left the end of the line, he was given a container for mailing in the urine and directions for its collection two and one-half hours postprandially. He was told to get in touch with his doctor but that no report could be given until the urine was received.

The whole plan and its execution seemed simple, worthwhile and harmless. The doctors of the community were responsible for this investigative project. No one knew whether it would indicate the value of different organizations conducting their own individual screening studies as practiced by the tuberculous and diabetic groups or whether they should combine and check each applicant for the various diseases at one time. Such an extensive examination might yield very little more than a urinalysis and a simple statement as to general health. We all looked forward to the completion of the screening and the analysis of the results. That one must beware of federal "Greeks bearing gifts" was emphasized by the institution of other such multi-phasic surveys not only before this one was studied but even before it was completed and a long-range follow-up study on this has already been requested. Thus we must determine not only the medical significance of mass surveys, but also the political implications with respect to socialism if federal funds are used.

However, the survey in Richmond seems to be well run due chiefly to the work of the Richmond doctors and the Richmond Department of Health under the able direction of Dr. Holmes. It should yield much interesting data which I dare say will be helpful from the standpoint of disease incidence in the ambulatory population as well as from the point of view of how to conduct surveys in the future and it may increase the desire of the public to have annual health examinations by the family doctors. At any rate, an annual screening test under the auspices of the government does not seem indicated.

WILLIAM R. JORDAN, M.D.,
Richmond, Virginia

SIR WILLIAM OSLER—MEMORIES*

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Durham, North Carolina.

Dr. Marvin Pierce Rucker, your President, is one of the oldest living students of Osler, and the basis for inviting me is that I am the youngest living student of Sir William. I know that I express the regret of all of us that Dr. Rucker is ill. In preparing this talk I took advantage of the fact that July 12, 1949, was the centenary of Osler's birth. Within the last six months five medical journals have published special issues devoted to him, and many articles have been written about him. I have read four hundred and forty of these and previous articles. In a way I am sorry I have done so, because my own reminiscences of my student days have been merged with my recollection of what I have read.

From my reading I gained three impressions. One is that no one who wrote about Osler can do so without going into rhapsodies. To those of us who worked with him these praising statements are rather understatements, but to the younger generation they are cloying. As a result, most students and young physicians today have no conception of Osler as a human being, and no idea of the devotion which he inspired in his students. My second impression from reading these tributes to Osler is that none of his students would brook any criticism of him. We regarded him as perfect. The third lesson I learned is that many of Osler's admirers felt that his influence was due to what he was rather than what he did. In all of these articles I have read there were very few details of his actual accomplishments.

So tonight I felt that I might review some of the arguments I had with my former chief, Dr. John Howland. When I returned from the first war I was an assistant to Dr. Howland, who was one of the white-coated laboratory physicians, and who looked on Osler as a representative of the frock-coated bedside generation. To irritate me he would say: "What did Osler do to be regarded as a great man?" As a result, I learned to marshal Osler's accomplishments. There are at least seven ways in which he was outstanding.

First, as a physician; Osler's ambition, as he wrote several times, was to make of himself a good clinical physician. Certainly he succeeded. As a diagnostician he has never been surpassed. As a therapist, it has been said that he was a nihilist, but he was a nihilist only in the sense that he did not use drugs unless there was definite proof of their efficacy.

The second pillar of Osler's fame was as a teacher. Under him the student for the first time was taught to work with the staff rather than listen to lectures. He also started the residency program in order to give young men an opportunity for training beyond the internship. However, as early as 1892 he pointed out the dangers of specialization. I am sure he would have felt that his training program had boomeranged if he knew that there are now 17,293 residencies in the United States and Canada. We must do what Osler did in his time—emphasize general practice to medical students because they cannot be legislated into that field, in which they are so greatly needed, as was pointed out in Dr. Rucker's paper.

Osler's third contribution is practically forgotten. He is remembered as a bedside physician, but it is not generally recognized that he was the first clinician who did laboratory work. He introduced laboratory methods into McGill in 1875 and taught clinical pathology at the University of Pennsylvania from 1885 to 1889. During his sixteen years at the Hopkins, he transformed and greatly enlarged the application of laboratory methods to medicine, and at Oxford he fostered research in physiology and pathology.

Fourth, Osler transformed medical education, and was an early advocate of medical licensure. He also did much to elevate the medical profession itself, through the American Medical Association and in the organization of medical societies such as the Association of American Physicians and the American Pediatric Society. It is often forgotten that Osler was as much of a pioneer in pediatrics as Jacobi.

From the Department of Pediatrics, Duke University School of Medicine and Duke Hospital, Durham, N. C., based on memories of student days at Oxford, 1913 to 1916.

*Presented by invitation at the meeting of the Medical Society of Virginia, at Fort Monroe, Va., October 10, 1949.

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He also laid the foundations of social service work and of the campaign against tuberculosis.

The fifth basis for Osler's fame is his concise and accurate observation, as recorded in his writings. His bibliography has over fifteen hundred items. It is amazing that one man could have written so much. He is best known for his description of the five Osler's diseases. I never heard him speak of them as such, but they are so known. In addition, his textbook on medicine became the standard throughout the world, and went through sixteen editions and eighty-four printings. Each succeeding edition illustrated the progress of medicine. The tragedy of the last edition is that Osler's name was left off the cover.

The next pillar is Osler as a historian. Each week at Oxford he would invite a group of us to his home and after dinner bring out some da Vinci or other books and talk about the authors. He gave us memories we shall never forget. In fact, some believe that his fame will rest more on his humanism instead of his medicine.

Last, but not least, was Osler's personal influence. His wonderful power made every young man he met feel that he was in the presence of one who was taking a personal interest in him. He made and held friends everywhere.

Lastly, it is impossible to overrate what Lady Osler did to stimulate the great physician. She was an American, from Boston, a descendant of the Reveres, and a stately hostess of unruffled geniality.

Osler's place in our memory is very secure; but it is up to us who knew him to present him to the younger generation not as a deified individual without any faults but as a human being who did so much for medicine. I do not believe anybody can replace him; and we must remember him not only for what he was to us but also for what he did. He embodied, applied and transmitted all that is finest and best in a physician.

Bibliotheca Obstetrica

JENTY, CHARLES NICHOLAS

DEMONSTRATIO uteri praegnantis mulieris cum foetu ad partum maturi in Tabulis sex . . . . translata a D. Casimiro Christophoro Schmidel in aes incisa et recusa a Johanne Michaele Seligmanno . . . 1761-1765.

Mezzotint engr. 64 cm. (Drawings for the mezzotints by Riemsdijk, text in Latin and German.)

Jenty came originally from France, and worked at Anatomy in London. He published a course of lectures on the human structure and animal economy (London 1757).

THE TREATMENT OF ACUTE LEUKEMIA WITH THE FOLIC ACID ANTAGONIST, AMINOPTERIN*

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and
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It is the purpose of this paper to discuss briefly the development and use of the folic acid antagonist, aminopterin, in the treatment of acute leukemia and to present seven cases in which it was used, five of which were treated at the Medical College of Virginia Hospital in Richmond, Virginia.

Shortly after pteroylglutamic acid (folic acid) made its appearance as a potent hemopoetic stimulant, certain carcinolytic powers of this drug in animals were demonstrated. Later, however, it was shown by Lewisohn that this power was not due to folic acid but to the folic acid conjugate, the so-called fermentation casei factor. This was later synthesized by the late Dr. Subbarow and shown to be pteroyltriglutamic acid, later named diopterin. The effects of this substance on incurable cancer in man were studied by Farber *et al.*, and among those cases treated were 11 children with acute leukemia. They observed what they called an "accelerated phenomenon" in the viscera and bone marrow of these children. This observation together with Farber's findings that a folic acid free diet protected against and enhanced the growth of certain cancers in rats suggested to him the possible advantages in the use of folic acid inhibitors or antagonists in the treatment of acute leukemia. This conclusion concurred with that of Wall and Little from their work on birds. Farber found, as did his contemporary, Meyer, using pteroylaspartic acid (an-fol A or R), one of the first folic acid antagonists, that although the initial case died without clinical evidence of response, postmortem studies showed a markedly hypoplastic bone marrow representing a greater magnitude than he had ever seen before. This was followed by a series of 14 children treated with the antagonist pteroylaspartic acid and 7 children treated with the antagonist methylpteroic acid. Sufficient encouragement was obtained from these to continue studies on more powerful antagonists to folic acid in the treatment of acute leukemia in children.

In November, 1947, the most powerful antagonist to folic acid, 4-aminopteroylglutamic acid (aminopterin) became available to Dr. Farber for his use in this work. At this time a series of 16 children were treated with the drug and of these 10 responded favorably. He found that it had marked effect on the leukemic bone marrow and caused a recession of the liver, spleen, and lymph nodes when they were enlarged. The white blood cells tended to return to normal regardless of whether there was a leukopenia or a leukocytosis. Also there was improvement, approaching normal of the red cell count, hemoglobin and platelets.

Farber distinctly warns that this drug is not without toxicity. The most important manifestations are stomatitis, ulceration of the mucous membrane of the mouth, smooth tongue, pharyngitis, atrophic changes in the intestinal epithelium, diarrhea, gastrointestinal hemorrhage, particularly when there is diffuse leukemic infiltration of the bowel, and depletion of the bone marrow leading to aplasia. Upon the appearance of any of these symptoms the drug should be temporarily discontinued.

He also warns against over-optimism about this treatment. He points out that the remissions are only temporary and that there is no evidence of a "cure" in these children. However, these are the most promising results in the treatment of leukemia so far reported, and further research may lead to a more satisfactory method of treatment.

In our small series of cases of acute leukemia treated with aminopterin, we have attempted to follow as closely as possible the dosage and treatment schedule recommended by Dr. Farber and feel that these cases substantiate many of his findings.

Case 1: Z. J., a 4 yr. old colored female, was admitted to Dooley Hospital on May 12, 1948, with a chief complaint of sore leg and arm of 4 days duration. There was a history of listlessness, loss of ap-

*Read before the annual meeting of the Medical Society of Virginia at Fort Monroe, Va., October 9-12, 1949.

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petite, and weight loss over a period of 2 months. Four days prior to admission the child complained of pain in the left wrist and forearm with some swelling and elevation of temperature, and the day prior to admission she complained of pain and hotness of the right ankle.

Physical examination on admission was negative except for numerous large anterior cervical nodes, enlarged and cryptic tonsils which were not inflamed, and a rough 1st sound with a questionable 3rd sound at the apex of the heart. The right ankle was swollen, warm and tender on palpation or motion. The impression at this time was acute rheumatic fever. All laboratory studies were within normal limits with the exception of the R.B.C. of 2.53 million; hgb. of 8.25 gm.; W.B.C. of 6,150, with a smear within normal limits; and a sedimentation rate of 33 mm. hr. Marrow studies were not done at this time.

The patient responded fairly well to symptomatic therapy for three weeks; however, at this time she appeared ill with fever, pain and heat of the right arm and leg, and a generalized lymphadenopathy with the nodes discrete and non-tender. The W.B.C at this time was 18,500 with 85% lymphocytes. The smear was checked by the hematologist and reported to be indicative of acute lymphatic leukemia, which was confirmed by sternal marrow and lymph node studies.

During the following week the spleen became palpable, W.B.C. dropped to 5,300, and the hgb. to 3.31 gm. The patient was given a whole blood transfusion and discharged on June 10, 1948.

She was re-admitted on August 10, 1948, with the history that in the interim she had progressive fatigue, apathy and anorexia accompanied by fever, painful swollen joints and edema of the face and extremities. Physical examination at this time showed puffiness of the eyelids and cheeks, generalized lymphadenopathy, liver 4 finger-breadths below the costal margin and tender, but the spleen not palpable. The right knee was swollen, hot and resistant to movement. The blood picture at this time showed R.B.C. of 2.38 million; hgb. of 7.3 gm.; W.B.C. of 14,450 with 13% neutrophils, 79% lymphocytes and prolymphocytes, 8% lymphoblasts and an occasional normoblast. Several whole blood transfusions were given and one week later the W.B.C. was 3,500 with 13% neutrophils, 24% lymphocytes, 1% monocytes, 62% lymphoblasts, and 2% normoblasts. The bone marrow showed a marked reduction in the total number of cells, most of which remained being lymphoblasts. The patient's course was downhill with anemia, lymphadenopathy, weight loss and listlessness.

At this time aminopterin was made available, and on September 19, 1948, the patient was started on daily intramuscular injections of 1 mgm. of the drug. The following day a stomatitis was noted, and, during the next week this and the patient's general condition became progressively worse. At this time it was noted that the liver was 6 cm. below the costal margin, the spleen 5 cm. below the costal margin, and there was bleeding from the mouth and rectum. Although the stomatitis and bleeding are recognized as toxic signs of the drug, it was continued due to the terminal condition of the patient, and crude liver and folic acid were given for one week. Following this the patient showed steady improvement with a gradual disappearance of the stomatitis, and one week later the W.B.C. was 850, with 42% neutrophils, 57% lymphocytes, 1% lymphoblasts. On October 10, 1948, the blood showed R.B.C. of 3.21 million; hgb. of 8.8 gm.; W.B.C. of 1,800, with 72% neutrophils, 27% lymphocytes, and 1% monocytes, all cells being mature.

The patient showed steady improvement with recession of the liver, spleen and lymph nodes. She had the appearance of a healthy 4 year old colored female.

In November, 1948, she showed swelling and tenderness of both knees and x-rays showed bone destruction. She was treated as a case of osteomyelitis; however, later it was decided that this was due to leukemia infiltration and she has remained in the hospital, to date being treated for this.

She still gets aminopterin in daily 1 mgm. doses, but this has had to be discontinued on two occasions for intervals of 6-7 days due to mild stomatitis.

Case 2: A. H., a 6 months old colored female, was admitted to Dooley Hospital on November 17, 1948, because of exophthalmos and diarrhea. The child had had a greenish diarrhea for two months which had become black 1 month prior to admission. Occasionally blood streaks had been noted. She was treated for bronchopneumonia 1 week prior to admission, and 3 days prior to admission the mother

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noted protruding eyes and swelling along the zygomatic bone.

Physical examination revealed a well developed and nourished 6 months old colored female with Cheyne-Stokes respiration. There was prominence of the zygomatic arch bilaterally extending back to the ears with soft tissue swelling anteriorly and lateral to the eyes. There appeared to be a bony enlargement of the right zygomatic arch. There was bilateral exophthalmos, more marked on the left, and tension was increased. There was slight swelling of the eyelids. The gums were thickened and of a bluish color. The axillary and cervical nodes were enlarged bilaterally, but the liver and spleen were not palpable. The blood showed R.B.C. of 2.24 million; hgb. of 5 gm.; and W.B.C. of 500,000 with many immature W.B.C. apparently of the myeloid series. The hematologist reported the smear to show marked leukocytosis with frequent monocytes, a few myeloblasts, promyelocytes and myelocytes. There was a definite tendency toward sickling on the smear with a few normoblasts present, and sickling was strongly positive in less than one hour. Marrow studies showed a definite monocytic leukemia.

The patient was given supportive therapy, several whole blood transfusions and the eyes were treated with x-ray. On November 24, 1948, aminopterin was started intramuscularly at ½ mgm. daily and on November 30, 1948, it was raised to 1 mgm. daily. The W.B.C. on November 29 was 150,000, and on December 1, was 50,000 with 20% neutrophils, 17% lymphocytes and the remainder monocytes and disentegrated cells.

The patient improved rapidly, the exohpthalmos regressed and her breathing became normal. The spleen had become palpable on November 25, 1948, but recessed rapidly after that. The patient refused to eat, however, and tube feedings had to be used.

In spite of the improvement the patient suddenly and unexpectedly expired on December 3, 1948, and the cause was not shown at postmortem.

Case 3: P. M., a three year old white male child, was admitted to the Medical College of Virginia Hospital on April 15, 1949, because of difficult breathing and cyanosis. For two years he had frequent upper respiratory infections, loose cough and drenching sweats and for six months had had anorexia. For three weeks he had chest pain after walking and one week prior to admission he developed paroxysms of crying and coughing of about 15 minutes duration twice a night. Some rattling breathing and gasping respirations occurred with the crying spells. For three days the child had been lethargic and had eaten no solid food, and he had been in a croup tent because the spells were becoming more frequent and of longer duration. He had chest pain with coughing.

Physical examination on admission revealed a well developed but poorly nourished white male child in acute inspiratory distress with a temperature of 100.2. There was minimal injection of the tonsils and anterior pillars. Chest examination revealed inspiratory difficulty with lower intercostal and substernal retraction on inspiration. There was dullness to percussion anteriorly to the left from the 1st to the 3rd rib to the axilla, blending with the cardiac dullness. Breath sounds were transmitted over the area of dullness. The lymphatics revealed ½ cm. occipital nodes and small discrete soft posterior cervical nodes; 1 cm. left axillary nodes; 1 cm. fusiform non-tender femoral and inguinal nodes. The blood picture on admission showed R.B.C. of 4.42 million; hgb. of 12.8 gm; and W.B.C. 12,800 with 35% neutrophils, 44% lymphocytes, 16% eosinophils, 2% basophils, and 5% monocytes. X-ray of the chest showed a tremendous mediastinal widening with an encroachment upon the trachea filling the anterior mediastinum, and lymphoma was suggested.

The patient was given supportive therapy and x-ray therapy to the tumor mass for 10 days, a total of 1,550 r being given. X-ray on April 25, 1949, showed only slight widening of the mediastinum with the lung fields clear.

Following x-ray therapy rapid swelling of the cervical lymph nodes was noted. The blood picture at this time showed R.B.C. of 3.68 million; hgb. of 10.6 gm.; and W.B.C. of 4,300 with 47% neutrophils, 43% lymphocytes, 5% eosinophils, 1% basophils, and 4% monocytes. A marrow study showed definite myelogenous leukemia. On May 2, 1949, the patient was put on ½ mgm. of aminopterin and raised to 1 mgm. daily the following day. This was maintained until his death.

In spite of the aminopterin and supportive care the patient went rapidly downhill and ceased on May 8, 1949. The blood picture the day of death showed R.B.C. of 2.25 million; hgb. of 5.4 gm.; W.B.C. of 7,300 with 1% neutrophils, 905 lym-

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phocytes, 1% eosinophils, 2% promyelocytes, 5% blasts and 1% myelocytes.

Case 4: B. H. U., an eight year old white male was admitted to the Medical College of Virginia Hospital, July 19, 1949. There is a history of a two year period of chronic otitis media treated intermittently with penicillin. At appearance of the infection with drainage of the right ear the previous week he was treated by penicillin and when the fever failed to respond and anemia was found, his doctor referred him to the hospital.

Physical examination revealed an ill appearing, listless white male, hearing lost, drainage of the right ear, foul smelling grayish white pus, bilateral mastoid tenderness, marked proptosis of both eyes, more particularly in the right, with periorbital edema. Both discs appeared fuzzy, and could not be well seen. Other essential physical findings were shotty small nodes in the cervical axillary and inguinal regions. The spleen was palpated 4 cm. below the costal margin.

Blood examination revealed 1,720,000 red cells, a marked reduction in platelets; 8,250 white cells, with 48 immature blast cells and 52 small lymphocytes. Sternal puncture showed many promyelocytes and blast cells showing Auer bodies. There were also a number of hemocytoblasts. The red series was markedly reduced.

Clinical Course: Aminopterin 1 mg. intramuscularly daily was started on August 1st. During the hospital course six transfusions were given and when there was no appreciable response to the aminopterin, this was raised to 2 mg. on August 13th, and to 3 mg. on August 29th. There were no appreciable reactions to the aminopterin other than a slight bleeding from the lips and at one time a membrane over the tonsil. There was no improvement in the white count, this ranging between six and fourteen thousand with 12% polys on one date, being the highest in this series, and the final count continuing to show about 50% blast cells. He was discharged at his parents' request September 2nd and died September 6th, at which time autopsy was granted. The clinical impression was acute myelogenous leukemia (chloroma).

Autopsy revealed multiple tumors involving the skull, sinuses and extra ocular tissue, extending into the subperiostium of the bones. These tumors were also seen along the vertebral column, extending well down into the pelvis, and all had a greenish tinge. The spleen and nodes about it were enlarged and there were nodules in the stomach mucosa. The anatomical diagnosis was chloroma.

Case 5: I. M. B., age four years, ten months. This white female was seen by one of us (J. H. S.) May 3rd, 1949, through the courtesy of Doctor Stanley Meade of Richmond, Virginia. The child had been well until ten days ago when she developed an unexplained fever of 102 degrees associated with listlessness and a mild upper respiratory infection. Aureomycin was given with no appreciable improvement in the temperature.

Physical examination revealed a well developed and nourished listless child with marked pallor. Tiny nodes were palpable in the cervical, axillary and inguinal regions. There were two small 4 mm. ecchymoses in the left buccal region. The spleen was firm and palpable six centimeters below the costal margin. Otherwise, the physical examination was essentially negative.

Laboratory Data: R.B.C. 1,500,000; hemoglobin 30%; W.B.C. 25,000, the smear showing most of these to be young blast cells. Very few platelets were to be found. The diagnosis of acute myelogenous leukemia was made. The family sought further consultation and the child was sent to the Children's Medical Center at Boston. There the diagnosis of acute "blast" leukemia was confirmed, the bone marrow puncture being reported as: "A very cellular marrow, made up of similar appearing large homogeneously stained young blast cells with occasional nuclei and frequent vacuoles. There is very little cytoplasm and the cells are quite young, making identification difficult."

Following two blood transfusions of 250 cc. the child was placed on aminopterin, 1 mg. intramuscularly daily on May 4th, 1949. During the next five days she became afebrile and the white count dropped 1,700 and, finally, on May 14th, to 950 white cells when the dose of aminopterin was reduced to .8 mgs. A blood transfusion of 300 cc. was given May 18th when the hemoglobin had dropped to 8.2 grams. She was returned to Richmond, June 1st where examination revealed a red count of 3,960,000 with 75% hemoglobin and 4,600 white cells, the smear appearing essentially normal except for the presence of a rare promyelocyte. The child retained a red count of about 4,000,000 with a white

count of 5,000 to 7,000 and an essentially normal differential with normal platelets. Her clinical picture appeared to be excellent throughout the months of June and July. Over this period the aminopterin was given by mouth, a one milligram ampule being dissolved in five teaspoons of orange juice and one teaspoonful discarded to give a dosage of .8 milligrams. Occasionally small sores developed in the mouth but these disappeared with continued treatment of vitamin B complex. During the latter part of July occasional blast cells were noted in the smear, but the red count ranged around four and a half million with a normal white count and differential. Although the clinical condition appeared excellent, the child's nurse felt that during the month of August the child was going down in her general health. Toward the latter part of August during weekly blood examinations, there would be times when at least 50% of the white count was made up of blast cells, or, again, only scattered blast cells would be seen. During September the blast cells ranged from 10 to 15% of the total white count. This is the situation at present.

Case 6: B. J. H. a six year old white female was admitted to the Medical College of Virginia Hospital April 26, 1949, with the complaint of swelling under the jaws of a week's duration, followed by swelling of eyes and anorexia. Pediatric consultation was sought in Lynchburg where a diagnosis of acute leukemia was made and the child referred to Richmond.

Physical examination revealed multiple firm, nontender nodes, pecan size, in the submaxillary region on the right side along with cervical supraclavicular axillary and inguinal palpable nodes, pea to acorn size. The liver was two and a half centimeters below the costal margin and the skin was palpable four centimeters below the costal margin. There was a puffiness of the eyelids and pinpoint, purpuric spots were noted over the abdomen. The child was listless and obviously ill.

Laboratory Data: R.B.C. 2,650,000; W.B.C. 361,000 with 1% PMN, 1% PMB, 33% small lymphocytes and 65% blast cells, thought to be lymphoblasts. Platelet count 122,000; normal, 500,000. The diagnosis of acute leukemia, probably lymphoblastic, was confirmed and a transfusion of red cell suspension from five hundred cc. of blood was given on the day of admission.

Subsequent Course: Aminopterin, 1 milligram intramuscularly, was started April 27th, and continued daily until her discharge May 4th. A further transfusion of 500 cc. of whole blood had been given on May 2nd and discharge to her family physician outside of Richmond was agreed to at the request of the family. At this time her red count was 4,720,000 with 133,000 W.B.C. lymphoblasts and prolymphocytes making up 64% of the count. Whether or not she was responding adequately was questionable and it was decided to continue at home injections of aminopterin daily.

Gastro-intestinal hemorrhages and stomatitis prevented continued use of aminopterin and it was used only periodically until the child was brought back to Richmond May 20th at which time the red count was 1,880,000 with 35% hemoglobin, and 5,800 white cells, the smear showing no abnormal cells. She was given a transfusion and returned home that day.

Report from the hospital June 15th showed 4,480,000 red cells, 36,000 white cells and the differential as reported showing no abnormality. Blood smear was requested and it was advised that the dose of aminopterin, because of continued difficulty with stomatitis, be reduced to .8 milligrams by mouth, the one milligram ampule being dissolved in 5 teaspoons of orange juice and water, with one teaspoonful being discarded. On August 5th blood smears and the blood count were sent to us, at which time there were 2,400,000 white cells with 40,000 leukocytes, approximately 50% of the high white count being what now appeared to be myeloblasts, the patient now appearing to be in definite relapse. A transfusion was given at the local hospital and August 12th the blood count was reported as 3,600,000 red cells with 30,000 leukocytes, 58% myeloblasts, 15% PMN, 12% "transitional", 10% lymphocytes (small), 5% lymphocytes (large). At this time the patient began to hemorrhage from the bowel and this continued for ten days with the patient unable to eat, taking only juices which she would expel most of the time. Another transfusion was given at home but she continued to have pain in the abdomen, chiefly about the navel, the aminopterin being discontinued during this period. The child died September 28th.

Case 7: M. B., a six year old, white female was seen by one of us (J. H. S.) through the courtesy

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of Doctor Stanley Meade of Richmond, Virginia, with the complaint of anemia, lymphadenopathy involving both sides of the neck, particularly the right, and difficulty in breathing. She had been sent home from a visit in another state with the possible diagnosis of infectious mononucleosis.

Physical examination revealed multiple nodes as large as an acorn in the right side of the neck and to a lesser degree in the left side. The spleen was palpable. An x-ray of the chest revealed a medial sternal mass while a blood transfusion had been given three days previously.

Laboratory work showed a red blood count of 2,570,000, 58.4% hemoglobin, 2,600 W.B.C. with 77 "lymphocytes", 18 PMN, 3 MN, 2 PME. The platelet count was 23,000. Study of the blood smear revealed a large number of immature blast type cells with a rare promyelocyte, a greatly increased platelet count and a red cell picture showing active regeneration with a number of large young red cells. A diagnosis of acute leukemia, probably lymphoblastic, was made from the smear. Biopsy of a cervical node was classed by the pathologist as lymphosarcoma and as this diagnosis had been suggested by the reticular appearance of the young blast cells in the peripheral smear, a final diagnosis of leukosarcoma was made and the child placed on aminopterin, milligrams 1, by injection daily.

After two transfusions, the child was sent home and continued on injections of aminopterin over a period of the next two months. There were frequent interruptions of treatment because of stomatitis and gastro-intestinal hemorrhage, the child being returned to the hospital for blood transfusions on two occasions during this period. The red count continued in the range of 3,200,000 to 4,000,000 and only once did the white count reach the total of 5,000 when on February 21st the smear was noted to be essentially normal, there being no immature cells. The platelets never rose to above 50,000 and with the exception of a short period of about a week the latter part of February, abnormal cells were always noted in variable numbers. Although aminopterin was continued, on March 25th the red count was 1,710,000 with 33% hemoglobin and the white count was only 350, the low count making it difficult to distinguish immature cells. The child died the following day. Autopsy was not performed. The drug was considered totally ineffective in this case with the possible exception of about one week in the middle of the course.

In summary, a brief history of the development and use of the folic acid antagonist, aminopterin has been given, and seven cases in which it was used have been abstracted. Of these cases, one was a leukosarcoma; one was an acute monocytic leukemia; two were acute lymphatic leukemia; and three were acute myelogenous leukemia. Three of these cases showed no response to the drug but the other four showed definite response. Of these four cases, one is still living 3 months after the diagnosis was established and one is still living 18 months after the diagnosis was established.

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DISCUSSION

DR. JOHN E. STEVENS, Richmond: Any agent, such as aminopterin, that may produce a remission in acute leukemia, even though temporary, demands our interest.

Dr. McCall's excellent report of the results that he and Dr. Scherer obtained while utilizing this drug parallels those of Sidney Farber. Aminopterin and other folic acid antagonists were first used in acute leukemia in November 1947 at Farber's suggestion.

The use of aminopterin has not been confined to the acute lymphoblastic leukemias of children. Dameshek, Doan, Stickney and others have used it with varying results in adults. While the most prompt and lasting remissions have been obtained in lymphatic leukemia, the monocytic and lymphosarcomacell types have shown some response according to Doan. The myelogenous leukemias have not been affected by this drug.

Results seem to vary with different investigators. Doan states that we may probably expect nine months remission in cases of true acute lymphatic leukemia. In fact, Farber

has reported a patient held in remission for 23 months. Stickney and his associates at the Mayo Clinic are less enthusiastic regarding this drug. In a group of 33 adults and 21 children, only 8 complete remissions (15%) were obtained. Of these 8, four are now dead, and the longest remission lasted four months.

Several points regarding the use of aminopterin should be emphasized. The dosage should not exceed 2 mgm. daily. Oral administration appears to be as effective as the parenteral route. The toxic nature of this drug contraindicates its general use unless proper system of control is set up. Daily leucocyte counts and physical examination with frequent bone marrow studies should be made while attempting to produce a remission. An optimum remission is more accurately determined with bone marrow study by one experienced in hematology. When such a remission is induced, a maintenance dose of aminopterin may be given two or three times weekly depending on the individual needs. Toxic manifestations which one should be alert to detect are: neutropenia, alopecia, ulcerative stomatitis (often first noticed under the tongue), diarrhea, nausea, vomiting, fever, and gastro-intestinal hemorrhage. The appearance of any of these should be cause for temporary cessation of therapy.

In summary, aminopterin should be used cautiously and only in selected cases of acute leukemia. It should be considered not a cure, but rather a depressant of a leukemic process that invariably is fatal. As Dameshek so graphically described it, "Acute leukemia may be likened to 'wildlife' which, although damped by aminopterin, continues to 'smolder'. This smoldering may suddenly light up again into an active leukemic picture, unless maintenance therapy is given." While clinical response has been striking in many instances, our enthusiasm has been curbed by the marked toxic affects encountered. Our judgment of when we should use this agent should be tempered with these facts.

I want to thank Dr. McCall for the timely report on this subject and for the honor in being asked to discuss it with you.

New Eye Instrument May Help Prevent Blindness.

A new instrument which measures pressure within the eye may result in the prevention of much unnecessary blindness. Development of the instrument, called a tonometer, is reported in the April 29 Journal of the American Medical Association by a New York doctor and a research worker.

Dr. Conrad Berens and Charles P. Tolman, B.S., also of New York, point out that the instrument is for "screening" large numbers of persons rather than for diagnosing specific diseases.

The instrument was developed from the basic design of an older instrument used for diagnosing eye conditions. Intraocular pressure is measured when the instrument is applied to the eye. The working parts are mounted in a plastic holder. The instrument is slightly less than three inches long and three fourths of an inch in diameter.

"We believe that this instrument, placed in the hands of general practitioners, may prevent blindness through earlier discovery of hypertension within the eye and earlier reference of the patient to an ophthalmologist," the authors say.

Increase of pressure within the eye is an early symptom of glaucoma, a principal cause of blindness, and other eye diseases.

No Preventive of Gray Hair.

An agent which will prevent the graying of hair of human beings is as yet unknown, says a medical consultant in the March 25 *J.A.M.A.*

"Sometime ago it was suggested that both pantothenic acid and para-aminobenzoic acid might prove to be anticanitic [opposed to graying of hair] agents because they seemingly prevented the graying of hair in laboratory rats," he writes. "However, they have had no such effect on humans."

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ANTETHORACIC STOMACH: SUBSTITUTION FOR ESOPHAGUS —CASE REPORT*

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Many methods have been devised to compensate for functional or anatomic absence of the esophagus or to substitute for it. Gastrostomy, for instance, may be employed as a compensatory measure but obviously has many drawbacks. Various types of ante-thoracic tubes have been employed as substitutes for the esophagus, but they, too, have presented many difficulties.

In recent years, developments in surgical technic, supportive treatment and anesthesia have made possible a trans-thoracic approach to the esophagus and stomach. This approach has permitted combined esophageal and gastric procedures in one stage and consequently radical resections of the esophagus with or without parts of the stomach may be done with primary anastomosis within the chest. As a result there is today much less frequent need to devise substitutes for the esophagus. Nevertheless, there will probably always be some patients in whom multiple stage operations may be necessary or desirable. It may be worth while, therefore, to present a method of substitution for the esophagus which appears to be unusual if not unique. The method was devised not by a previously planned approach but by the adaptation of circumstances that developed during the care and observation of a patient whose course will be described in some detail.

CASE REPORT

History No. 167999. Miss F. C., age 54 years, was admitted to the University of Virginia Hospital, May 1, 1941. She complained of marked difficulty in swallowing food. Trouble had first appeared four months before and had increased progressively. At the time of admission she could take only small amounts of soft solid foods and not even these except by washing them down with liquids. Regurgitation when attempting to swallow had been recently troublesome. She estimated that she had lost ten pounds or more in weight. No blood had been vomited or seen in her stools.

She had consulted her regular physician after two months of symptoms but derived little if any benefit from his treatment. He finally had referred her, April 25, 1941, as a private patient to the Roentgenologist of the University of Virginia Hospital. Because of the results of the roentgenologic examination her physician referred her for hospitalization.

Examination: Physically she was quite small in stature, 61½ inches, and extremely thin. She weighed 85 pounds though her usual weight had been 98 pounds and her maximum 105 pounds. Except for complete adentia no other positive physical findings were recorded.

Her gastro-intestinal examination by x-rays April 25, 1941, already referred to, revealed deformities involving both the esophagus and the stomach at the cardia. At a distance of about 2.5 cm. above the cardia the esophagus had a deeply pinched appearance and distal to this point there were polyp-like filling defects in the column of barium. Similar defects were present in the upper part of the stomach. A tumor, probably carcinoma, with marked obstruction was reported.

An esophagoscopic examination was made May 2, 1941, by Dr. F. D. Woodward. At the lower end of the esophagus, just above the diaphragm, a large mass was found protruding into the esophageal lumen. It bled easily and its appearance suggested a malignant tumor. Tissue removed from the mass was examined microscopically and revealed "epidermoid carcinoma of the esophagus, grade 2 to 3".

Laboratory Examinations: Routine laboratory studies revealed nothing abnormal except for evidences of secondary anemia, hemoglobin 64 per cent (10 grams), red blood cell count 2,380,000. Following the administration of three transfusions, 500 cc. each, of whole blood, the blood was restored to normal; hemoglobin 97 per cent (15 grams), red blood cell count 4,560,000.

The diagnosis, carcinoma of the esophagus with extension into the stomach and marked obstruction at the cardia of the stomach, led to the decision to

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explore the region surgically. It was thought that resection might be accomplished but if not, that a gastrostomy could be established as a palliative measure. Because subsequent events led to a series of operations they will be designated numerically.

Operation No. 1: May 12, 1941. Partial Gastrectomy and Esophagectomy; Gastrostomy, Anterior Abdominal, Left. Continuous spinal anesthesia with pontocain was employed and the abdomen was entered through an incision in the upper midline. An apparently malignant tumor was identified, involving the lower two or three centimeters of the esophagus and the upper five or six centimeters of the stomach. There was, however, no demonstrable evidence of local spread of the tumor or distant metastasis. Resection with some prospect of a cure seemed feasible.

Accordingly, after appropriate dissection and hemostasis, the esophagus was divided about 5 cm. above the diaphragm. Its proximal stump was closed by two lines of inverting sutures. The cardiac two-thirds or more of the stomach was resected on a line extending from the lower third of the lesser curvature to the upper third of the greater curvature. The gastric remnant was closed by two rows of inverting sutures except for a small opening at the greater curvature employed for the formation of a gastrostomy by pulling this part of the stomach to the outside and anchoring it in a stab wound made through the upper part of the left rectus muscle. Finally the abdominal incision was closed, a mushroom head catheter was placed in the gastrostomy and a nasal tube was passed into the esophagus to keep it free of accumulation of fluid by the constant application of negative pressure. The patient had no untoward reaction to the operation and postoperative convalescence was uneventful.

Pathology: "Squamous carcinoma of the esophagus infiltrating the stomach". It was never determined microscopically with certainty whether or not the division of the esophagus had been done with an adequate margin above the upper limit of the tumor. The uncertainty led to the decision to resect the esophageal stump surgically.

Operation No. 2: June 5, 1941. Partial Esophagectomy, Transpleural, Left; Esophagostomy, Anterior Cervical, Left. Twenty-four days after the abdominal operation described above, a consultant in thoracic surgery, Dr. E. C. Drash, removed the major portion of remaining esophagus and anchored the proximal stump as a fistulous opening in the neck.

Under general anesthesia an incision was made along the second interspace in the back on the left side, dividing the third, fourth, fifth and sixth ribs, retracting the scapula laterally, carrying the incision forward in the fifth interspace and through the resulting transpleural exposure freeing the esophagus. A lymph node adjacent to the closed esophageal stump, near the diaphragm, was sent for special microscopic examination. The esophagus was pushed upward into the left side of the neck and the chest incision closed.

An incision was then made in the left side of the neck, well above the clavicle at the posterior border of the sternocleidomastoid muscle. The esophagus which had been pushed up from below was delivered and divided and the proximal open end anchored in the skin incision to form a cervical esophagostomy. The operation was well tolerated.

Pathology: "Normal esophagus. Squamous carcinoma metastatic to lymph node". (The node was the one mentioned above.)

Convalescence following the two operations for the attempted eradication of the patient's tumor was uneventful and she was discharged from the hospital June 26, 1941, twenty-one days after the second operation.

Follow-up visits were made by the patient periodically and examinations did not show anything to suggest persistent, recurrent or metastatic tumor during more than five years of observation. Her weight did not at any time return to the preoperative level. She found life reasonably satisfactory but the care of the esophageal fistula on her neck and the gastrostomy on her abdomen was rather burdensome. She frequently asked about the possibility of re-establishing continuity between her pharynx and stomach.

It appeared that an attempt to establish continuity was justified by five years of freedom from tumor recurrence so she was re-admitted to the hospital October 10, 1946. Tentative plans were made to form an artificial esophagus by the technic described by Longmire and Ravitch[2] reported a few months previously.

On examination her weight was 71 pounds, her general appearance good, her esophageal and gastric fistulas clean. Blood examination showed hemo-

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globin 74 per cent (11 grams); red blood cell count 4,300,000.

Operation No. 3: October 22, 1946. Transplantation Gastric Remnant from Abdomen to Subcutaneous Space, Sternal Region; Gastrostomy, Infraclavicular Region, Left. Under continuous spinal anesthesia with pontocain, later supplemented with light general anesthesia with nitrous oxide and oxygen the abdomen was entered by an incision made through the upper part of the left rectus muscle. No sign of persistent, recurrent, or metastatic tumor was found within the abdomen. The gastric remnant had somewhat the appearance of a large tube and this suggested the possibility of transplanting it so that it might still serve as a stomach while substituting anatomically for the esophagus. This seemed a much simpler and safer procedure than the Longmire-Ravitch operation. Reasonably accurate measurements and estimates confirmed the feasibility of such a plan. Division of the vessels between the spleen and the stomach and those in the gastro-colic omentum left the stomach adequately supplied by blood from the right side. The stomach was released from its gastrostomy attachment to the abdominal wall and pulled from the abdominal cavity through a midline incision about 5 cm. in length made immediately below the xiphoid process. Through the same incision long curved hemostats were pushed into the subcutaneous layer in the sternal region and a tunnel beneath the skin made from the xiphoid to the left sternoclavicular region. A small incision about 2.5 cm. in length was made in the skin beneath the inner part of the left clavicle as an exit for the subcutaneous tunnel. A long traction suture in the open end of the gastric tube was pulled through the tunnel and the open end sutured to the skin margins of the small infraclavicular incision for the formation of a new gastrostomy very close to the esophageal fistula just above the clavicle. It was noted that the pylorus had been pulled to a position just outside the epigastric fascial incision but there did not seem to be any interference with either blood supply or lumen in the region. The skin portion of the epigastric incision was closed by subcutaneous and skin sutures to cover the underlying gastroduodenal region. The former gastrostomy opening and the exploratory incision in the abdominal wall were both closed and a feeding tube left in the new gastrostomy stoma. The patient tolerated the operation easily and had an uneventful postoperative convalescence. Ground solid food and liquids were administered uninterruptedly through the new gastrostomy and the subcutaneous position of the gastric remnant in the sternal region did not seem to interfere with normal gastric function.

Operation No. 4: November 8, 1946. Gastro-Esophageal Anastomosis, End-to-End. Combined rectal and inhalation anesthesia with avertin and nitrous oxide-oxygen respectively was employed satisfactorily. The esophagus and stomach were both freed from their respective skin attachments in the region of the left clavicle and the skin separating them was undermined so that the esophagus could be pulled under the skin bridge and approximated to the gastric opening. End-to-end anastomosis was made with two rows of sutures, the anastomosis was allowed to retract beneath the skin bridge and the two small skin incisions closed. In this fashion continuity between the esophagus and gastric remnant was established and the patient was able to swallow liquid and solid foods again. She was discharged from the hospital November 14, 1946, six days after operation, and returned to her home.

Readmissions to the hospital were necessary as follows:

December 3-8, 1946, for infection and a small fistula at the site of gastro-esophageal anastomosis. Both responded promptly to wet dressings locally and penicillin therapy.

January 20-31, 1947, for stricture at or near the site of gastro-esophageal anastomosis. The stomach was incised January 28, 1947, the stricture dilated digitally and the stomach closed, a fifth operation.

February 8-March 17, 1947, for recurrence of the stricture. A temporary gastrostomy was established February 12, 1947, her sixth operation, and through it dilating sounds were passed at the time and on various subsequent occasions.

April 9-16, 1947, for closure of the temporary gastrostomy. The lumen of the anastomosis easily passed sounds 1.5 cm. in diameter so the gastrostomy was closed, her seventh and final operation.

Follow-up examinations have been made several times since then. The last examination was made February 14, 1949, two years following the final manipulation of her gastro-esophageal anastomosis. She stated she could eat any solid food she desired though she found it best to eat slowly and chew

thoroughly. The presence of her stomach in the subcutaneous tissue in the sternal region has not troubled her. (Figs.). She has never returned to her normal weight before her original operation, 85 pounds. She has weighed 71 pounds, the same that she weighed before the series of operative procedures to establish continuity between her esophageal and gastric remnants.

Fig. 1.

Fig. 2.

Fig. 3.

Figs. 1, 2 and 3.—Photographs of the patient February 14, 1949, 7 years 9 months after resection of esophago-gastric carcinoma; 2 years 3 months after completion of antethoracic transplantation of gastric remnant which substitutes for the esophagus. Various phases of gastric peristalsis in respone to ingestion of food.

COMMENT

Perhaps only a few features of the case reported deserve comment. First of all, it should be stated again that the method just described, the use of part of the stomach itself, transplanted in a subcutaneous tunnel in the sternal region, in substitution for the esophagus which had been removed, was not originally planned but was developed by adapting circumstances as they occurred.

The first operation was undertaken in the belief that the patient had a hopelessly inoperable carcinoma of the lower esophagus with extensive invasion of the stomach and that probably nothing more than a gastrostomy as a palliative measure might be done. A similar problem in a patient today, of course, would more likely suggest solution by a transthoracic laparotomy unless some specific contraindication should exist. However, at that time, May 12, 1941, although the first transthoracic operation of the sort in this country had been done by Phemister[1] January 26, 1938, the operation had not been often employed. At the Mayo Clinic, for instance, Walters[3] first successfully used the procedure January 14, 1942.

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When the second exploration of the abdomen revealed the tubular character of the gastric remnant, it was evident that some adaptive process must have been at work. At the time of the first operation, five years before, the stomach had been divided along a straight line more or less paralleling a line tangent to the curve of the central part of the greater curvature. While the resection removed the greater part of the lesser curvature region of the stomach and left a much larger proportion of the greater curvature, the gastric remnant was less like a tube than a triangle. The remaining lesser curvature formed one side and the line of resection formed another. The two met in an obtuse angle and rested upon a long base, the remaining greater curvature. The gastric remnant, relieved for the most part of its lesser curvature anchorage and altogether of its esophageal fixation, was able to swing like a hammock between its two points of attachment, the duodenum at one end and the gastrostomy stoma at the other. It is not difficult to imagine how the weight of the stomach and its contents and the other forces related to gastric motility might encourage the gastric remnant to elongate and assume the form of a somewhat bulbous tube. This result was most fortuitous for it not only suggested the antethoracic transplantation but made it possible.

Antethoracic substitution for the esophagus, by the method described or by any other method, entails multiple operations. These in turn, while prolonging discomfort and increasing costs, may so reduce risk as to be thoroughly worthwhile in selected instances. These and other factors may always reserve a place for antethoracic operations in spite of the obvious advantages of the one-stage transthoracic operation with immediate anastomosis between the esophageal remnant and the remaining stomach or intestine.

Observation of this patient over a period of about two years indicates that the motor function of the gastric remnant has been maintained and appears to be quite adequate for digestive processes. In the upper half of the gastric remnant peristalsis can scarcely be made out, while in the lower half waves of peristalsis are strikingly visible and easily palpable as they follow one another downward and disappear through the small epigastric portal into the abdominal cavity.

As yet, no effort has been made to study further the function of the antethoracic stomach—esophagus. The exposed portion of the gastric remnant and the consequent ability to observe it directly would be ideal for investigation of gastric motility and influence of drugs, foods and other agents upon it. Worthwhile correlations between motor and chemical function and roentgenologic data might be possible.

CONCLUSION

The case described demonstrates that it is feasible to transplant a remnant of the stomach, preferably more or less tubular, to a subcutaneous tunnel in the sternal region, anastomose it to an esophageal remnant in the clavicular region and expect the gastric remnant to function satisfactorily as both a stomach and an esophagus.

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ADDENDUM. The patient was readmitted to the University of Virginia Hospital July 14, 1949 because of severe abdominal pain of twenty-four hours duration. Intestinal obstruction was suspected and the abdomen was explored immediately. It contained an estimated 1,500 cc. of fresh blood and clots. There was a gaping, bleeding rent in the extreme lateral aspect of the right lobe of the liver coinciding with one of many tumors in the liver, presumably metastatic in origin. Tissue was taken for study and the rent repaired. No other tumor was found elsewhere in the abdominal cavity. After microscopic study, the tumor was reported: "Metastatic adenocarcinoma. No definite primary site can be determined but I favor renal origin". It showed no similarity to the "Epidermoid Carcinoma of the Esophagus, grade 2 to 3, with metastasis to a lymph node" removed at the time of her original operation May 12, 1941. Postoperative convalescence was normal and she returned home in seven days, July 21, 1949. Her condition gradually deteriorated, however, and she died, presumably from her second carcinoma, August 25, 1949. No postmortem examination was made.

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USE OF PENICILLIN FOR TREATMENT OF EARLY CASES OF SYPHILIS IN THE CITY OF RICHMOND*

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With the impetus given by World War II to the use of penicillin in the treatment of syphilis, public health concepts concerning the disease underwent radical revision. In 1947 the Syphilis Study Section of the National Institute of Health released effective schedules of treatment for syphilis with penicillin, oil, and beeswax, and combined schedules, using adjunctive treatment with arsenic and bismuth on an ambulant basis. As a result, many urban public health authorities felt that it was no longer administratively feasible to operate Rapid Treatment centers. In that year the Richmond Department of Health closed the Richmond Community Hospital, which was its Rapid Treatment Center and made plans to treat all early syphilis in its Venereal Disease Clinic. Late and other complicated syphilis by agreement was to be referred to the Out-Patient Department, Medical College of Virginia.

Many treatment schedules were considered, only to be abandoned because reports as to their efficacy and therapeutic effectiveness did not seem to warrant their practical use in a public health clinic. Finally, a treatment schedule was suggested by the Research Grants Division of the United States Public Health Service with a request that it be studied not only as to its therapeutic effectiveness, but also as to its application for use in a public health clinic, by making a detailed study of case-holding and case follow-up. Accordingly, it was agreed that we should use 600,000 units penicillin, oil, and beeswax, given daily for six days. A case was considered a case-holding success if six treatments were administered within a period of ten days. If treatment was not completed within ten days, it was a case-holding failure. As the clinics were open only from Monday to Friday, all patients going through the study had at least a two-day interval in their treatment series that could be considered an interruption. It was

NUMBER OF PATIENTS FOLLOWED AND RELAPSES OBSERVED

Diagnosis		1st 6 Months	2nd 6 Months	3rd 6 Months	4th 6 Months	Total Relapses In Group
Primary	No. followed	57	41	12	10	
	Relapses	2	5	1	0	8
Secondary	No. followed	78	51	15	11	
	Relapses	8	4	0	0	12
Early Latent	No. followed	138	91	26	17	
	Relapses	6	7	7	0	20
Sero-resistant Muco-cutaneous relapse and Inadequate previous treatment	No. followed	50	32	6	6	
	Relapses	3	4	0	0	7
Total	No. followed	333	215	59	44	
	Relapses	19	20	8	0	47

*Read before the annual meeting of the Medical Society of Virginia at Fort Monroe, Va., October 9-12, 1949.

agreed that this interruption would not seriously affect the therapeutic results of the schedule.

Under this treatment schedule 465 individuals were treated; however, only 454 will be included in the report, as eleven individuals had a diagnosis of late latent syphilis or the record had been misplaced and could not be verified.

The initial diagnoses of this group were as follows: primary, 77 (22 of these were darkfield positive serology negative and 55 were serology positive); secondary, 106; early latent, 191; and a group of 80 with a diagnosis of sero-resistant, mucocutaneous relapse or inadequate previously treated early latent syphilis from some other clinic. (Also included in this group are all of our own relapse cases that were re-treated.) Under the studies protocol each treated patient was to report back once a month for a serologic test for syphilis for the first year and every three months during the second. At the end of the first year, spinal fluid examination was to be made. In some instances, however, spinal fluid examinations were not made until eighteen months had elapsed. Most of the spinal fluid examinations were done as scheduled, only twenty-five having been done later than the fourteenth month. Because of this, no break-down is attempted as to the point at which spinal fluid either became significantly positive or, conversely, failed to become negative.

Examining the outcome of treatment clinically, serologically, and by spinal fluid, it is found that the relapses tended to occur most often in the sixth month; however, they were spaced out in a low curve from the third month through the thirteenth. In the group of primaries treated, fifty-seven were followed for six months with two relapses, both of which were believed to be bona fide reinfections. In the second six months there were five relapses in forty-one followed for twelve months, and in the thirteenth month one more relapsed in the sixteen patients followed for eighteen months. After the eighteenth month no other relapses occurred. This gives a total of eight relapses, or 10% in the group of primaries.

Of the 106 patients with initial diagnosis of secondary syphilis placed under treatment, seventy-eight were followed six months with eight relapsing; (one of these occurring in the sixth month was believed to be a true reinfection). Fifty-one were followed from six to twelve months with four relapses; fifteen were followed an additional six months up to eighteen months with no relapses, giving a total of twelve known relapses in the group, or a percentage of 11%.

In the group diagnosed as early latent, relapse tended to occur later than it did in either of the above two groups with a few relapses occurring as late as the eighteenth month. Of the 191 patients in this group started on treatment, 138 were followed for six months, with six relapses; ninety-one were followed twelve months, with seven relapsing towards the end of the period; twenty-six were followed for eighteen months with seven relapsing (of these, two had positive spinal fluid examinations without positive serologies). A total of twenty relapses occurred in this group, or a percentage of 10%.

In the group of sero-resistant, muco-cutaneous relapse or inadequate previous treatment, eighty individuals were treated, one of whom immediately relapsed and was re-treated. Two relapsed in the sixth month. There were no other serologic relapses. In the twelfth month, however, four patients were discovered to have positive spinal fluids, all of whom had negative or satisfactory serologic tests. A total of seven relapses occurred in this group or a percentage of 9%.

It is interesting to note that neither the primary nor secondary groups ever showed a positive spinal fluid examination. Out of 197 spinal tests done there were eleven positives, seven in the early latent group and, as mentioned, four in the mixed diagnosis group. Of these, one was re-checked two weeks later for verification and found to be negative. All ten patients with positive spinals were re-treated but have not been followed sufficiently long to make any statement as to their therapeutic outcome.

The follow-up for the entire group showed that of the 454 treated, 333 were followed six months with nineteen relapses; 215 were followed twelve months with twenty relapses; and fifty-nine were followed eighteen months showing eight more relapses; forty-four were followed two years with no further relapses developing. In all, forty-seven patients had some form of relapse and were re-treated, giving an accumulated re-treatment rate of 10%.

We feel safe in stating that this rate compares favorably with other treatment schedules.[3] In this study of 454 cases evaluated as to the patients' faithfulness in coming to treatment, there were only five individuals who became delinquent, all of whom

were subsequently re-treated. When one thinks back to the old arsenical bismuth type treatment, with many clinics holding less than 20% of their patients to the successful completion of minimal adequate therapy (20 arsenical, 20 bismuth), and the clinics with the highest ratings achieved only 45% success in their case-holding, it is obvious that ambulatory penicillin, oil, and beeswax has a tremendous advantage over the former system of therapy. Of the cases adequately treated on this schedule, one can conclude that it permits ease of case-holding and has a reasonably low-accumulated re-treatment rate, with the added advantage of rendering an infectious patient almost immediately non-infectious.

At a later date a report on a second series of cases treated with 1,200,000 units of crystalline penicillin with 2% aluminum monosterate given once a week for four weeks will be reported and a comparison made as to the therapeutic efficacy of this group of cases and the case-holding success as compared with the one here reported. From the study reported above and others in the literature, it becomes apparent that acceptable dosage schedules which are therapeutically effective and permit the ambulant treatment of syphilis are available. From the case-holding aspects of the study and from the ease of case-holding, we see no reason why the treatment of syphilis cannot be carried on entirely by the family physician. The public health clinics then could be converted to diagnostic centers, where their functions would be to provide spinal fluid examinations, darkfield examinations, and other technical procedures. We believe that a relationship similar to the one existing between the Rheumatic Fever Consulting Service and the Tumor Diagnostic Clinic Service, the Chest Clinic and the private physician, should be established. For example, patients with suspected tuberculosis, among indigent and medically indigent, are referred to the Chest Clinic by their family physicians for physical examination and x-ray, with the clinic rendering detailed reports to the referring doctor.

In order for this to be completely successful, the family physician will have to assume the responsibility for examining the marital partner of the case to determine possible co-joint infection. He should also obtain contact information as to the patient's extra-marital sexual contacts and report these to his Health Department for investigation. The Richmond City Department of Health is merging its clinic with Medical College of Virginia; the clinic will function for the treatment of indigent and medically indigent. This clinic will also provide consultation service similar to the type outlined above, for physicians practicing in the City of Richmond. This service will function in cooperation with the consultation service recently announced by the State Department of Health.

In summary, it is believed that ambulatory penicillin is by all odds the treatment of choice. Therapy with either beeswax and oil or 2% aluminum monosterate has rendered the treatment of syphilis no longer a clinic function, but one belonging to the private physicians, since the acceptable schedules are easily adaptable to office practice.

DISCUSSION

DR. THOMAS W. MURRELL, SR., Richmond: Doctors Bowden and Holmes have presented a carefully prepared review of four hundred and fifty-four cases of early syphilis which shows the six hundred thousand units of penicillin given every day for six days constitutes a successful treatment compared with other methods and other days. This is an amazing thing and almost incredible to one who looks back to the three years of mercury and iodides and who graduated into the eighteen months of arsenic and bismuth as a modern and dramatic advance in the progress of therapy—six days as against all that weary time. If a syphilographer had only one novel to read it should be "Twenty Years After", and the old D'Artagnans who through the years have been crossing blades with Monsieur Spirochete de Morbus Gallicus can be forgiven if, when they read this paper, there be a suspicion of oversimplification. This is justified because as far as intensive penicillin is concerned only five years of the twenty has passed. God grant that it be so, for, if so, then syphilis comes back to where it properly belongs—to the professional sanctity of a physician's office and can almost be reduced in its early stages to the category of a minor disease.

A medical student might ask, why all this time for evaluation? The actual answer is that serology, which is constituted the judge and jury of therapy, has not kept pace with therapy, and clinical judgment has to make up the deficiency.

I once heard Charles Rein facetiously say that the serologists had done such a good job within their field that the medical profession had become Wassermann-fast. He meant, first, that the bulk of the medical profession with its allied help consider that a positive Wassermann is indubitable proof of syphilis, which it is not. Second, it is an accepted idea that the degree of a Wassermann report, that is, four, three, two and one plus, is proportionate to the pathology present, and this is not true, even

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though it is helpful in evaluating therapy; lastly, that a negative report is full and final evidence of cure, and it is not and has never been. Yet this has been the standard set. For forty years we have worked to get something which we did not trust when we got it, and that does not make and never has made sense in any language. In scientific language, a phenomenon is a fact which is presented as a fact without explanation or elucidation. Actually that is what the Wassermann has always been. Nowhere in the field of practice are such momentous decisions made on such debatable evidence. Consequently, there is in common use a phrase—"serological relapse". What does this actually mean? To propound this question is like poking a stick in a hornet's nest for, regardless of conviction, there are so many exceptions to the rule that the only completely honest answer is, "I don't know". A mariner would be in a comparable state if he had to depend on a compass which he could not trust. Such a man would probably toss it overboard and go back to the stars, which have never lied to him. In medicine the stars are clinical evidence and time.

Obviously, then, what we most need is not better therapy but a dependable negative test, serological or otherwise. It should be borne in mind that this routine is one for early syphilis and its brilliant results do not absolve in any way the physician from his duty of spinal puncture before the books are closed. Even with this, in the light of our present knowledge only those who are alive fifteen years from now will be able to properly evaluate this paper.

DR. W. L. EASTLACK, South Boston: Up to the present there has never been an answer to syphilitic prophylaxis, but I understand that in the last few months there have been some very outstanding revelations, and I should like for Doctors Holmes and Bowden to discuss those, please.

DR. DUDLEY C. SMITH, Charlottesville: This paper of Drs. Holmes and Bowden is very timely, because we have just reached the stage of experience and development in the use of penicillin in the treatment of early syphilis justifying definite statements. I think we can say definitely that penicillin is the most effective remedy yet discovered in the treatment of syphilis, but it is not one hundred per cent curative even in high dosage. In the University of Virginia Hospital Clinic we have treated since April 1, 1944, about 500 cases of primary and secondary syphilis, with a failure rate of about 22 per cent. This is not as good as reported in this paper. Some of the difference is due to the fact that we used a low dosage and a short time schedule on the early cases when the work was started; and, also, the case follow-up is not too high in Drs. Holmes and Bowden's report.

Of the failures at the University Clinic, 52 per cent were definite clinical relapses (we attempted to rule out re-infections), 22 per cent of them were serological relapses, and 26 per cent were classified as serologic failures due to the fact that they were sero-resistant or continued to have definitely positive serological tests.

In the last two years our schedules of treatment have been longer, and with larger amounts of penicillin. In this particular group, with a one to eighteen months' follow-up (and that is a rather short follow-up time), we have had only 6 per cent failure rate.

Procaine penicillin in oil with aluminum monostearate seems to be the best form of this preparation yet available for ambulatory therapy. If you give 1,200,000 units of this substance (that is 4 cc. of the usual preparation) intramuscularly at one site (not divided between the hips), you get an effective blood level for about one week. If you give this same dosage—4 cc.—in each hip (total 8 cc.), you get an effective blood level for from eleven to sixteen days. For one treatment that is remarkable.

The time factor in treatment, as well as the total dosage, is very important; and I am really surprised that we have only about 10 per cent failure rates when the treatment was given for only six days. There will be a number of relapses unless some type of treatment is continued for three to four months. I am more and more convinced that the Spirochaeta pallida are not easy to "knock-out". It is my opinion that the minimum treatment at the present time for early syphilis would be 4 cc. of procaine penicillin in oil with aluminum monostearate weekly for five weeks and ten weekly injections of bismuth—one injection a week for ten weeks, starting the bismuth at the time you start the penicillin. The minimum treatment period, then, would be ten weeks. That would be 6,000,000 units of penicillin and 1500 mg. of bismuth.

I should like to add ten years to Dr. Murrell's recommendation about the evaluation of any antisyphilitic drug, making it twenty-five years instead of fifteen, because cardiovascular syphilis usually takes from twenty to twenty-two years to show itself.

I may be getting a little ahead of Dr. Bowden on this, but I had written down here a recommendation of Drs. Schoch and Alexander about treating syphilis in the incubation period. As you all know, about 75 per cent of all sex partners of early infecticus syphilitics become infected. Drs. Schoch and Alexander have been able to prevent infection in these cases in 90 per cent of the cases by giving treatment immediately. This is particularly effective in preventing what is called "pingpong" syphilis; that is, one partner will have syphilis and the other will catch it, the first partner will be treated and cured but become re-infected from the other and so on.

Patients with suspicious clinical lesions should not be treated until a confirmed diagnosis is made. The practice of giving an injection of penicillin and then sending the patient in for a darkfield examination should be discouraged.

DR. E. E. BARKSDALE, Yater Clinic, Washington, D. C.: In answer to Dr. Eastlack's question I should like to make one statement. We have some unpublished studies. We think that 600,000 units of penicillin given within six hours after exposure will prevent both gonorrhea and syphilis. Moral: if you have been exposed, take penicillin.

DR. HOLMES, closing the discussion: Dr. Outland has told me that I shall have to close the discussion in three minutes, but I shall take a few seconds to thank Dr. Murrell and Dr. Smith for their discussion.

Dr. Murrell has very charmingly and very clearly pointed out the limitations of serological tests in syphilis. I am afraid we have been inclined to rely entirely too much on serology. As Dr. Murrell and Dr. Smith both said, the final answer in these cases will not be known until an interval of at least fifteen to twenty-five years has gone by.

There are about fifteen to twenty different schedules of penicillin therapy, all of them effective, depending somewhat upon the individual doctor's likes and dislikes. As Dr. Smith pointed out, our failure rate and follow-up rate have not been quite as good as in other sections of the country. That is true, but as public-health officers we are primarily interested in the prevention of the spread of infection by chemically quarantining the infectious early case. Further, another important point is the current belief that penicillin will reduce this disease to a minor public-health problem long before we as clinicians can evaluate its therapeutic efficacy. If penicillin has accomplished no one other thing it has certainly reduced the infectious period and in turn reduced the reservoir of infection, as is being attested by the markedly reduced morbidity rates now being reported.

The prophylaxis of syphilis is now in the early research stages, and the men responsible for that research—Dr. John Mahoney, at Staten Island, and Dr. Harry Eagle, of Johns Hopkins, have not as yet published their studies. Dr. Schoch, of Dallas, Texas, has had remarkable success in averting pingpong syphilis. Dr. Eagle reported remarkably successful results in averting gonorrheal infection in personnel of the United States Navy stationed in Mediterranean ports.

I believe we are rapidly approaching a one-injection treatment for syphilis, which will be of great benefit to public health. In Richmond we are at present preparing to conduct a multi-phasic laboratory screening survey of chronic diseases in which we will test for syphilis. If it were possible to give the positive reactors a one-shot treatment for syphilis on the spot, think of the results that might be expected.

I want to thank Dr. Murrell again for his very charming discussion and to thank him for pointing out the weaknesses that we know exist in the paper.

Floral Eponym

Afzelia Leguminosar

AFZELIUS, ADAM (1750-1837)

THIS Swedish botanist was born at Larf, Vastergoland. He founded the Linnaean Institute at Uppsala in 1802 and in 1812 became Professor of Materia Medica at the University. In addition to various botanical writings, he published the autobiography of Linnaeus in 1823. His brother Johan was Prefessor of Chemistry at Uppsala and another brother, Per (1760-1843) was Professor of Medicine.

Afzelius is a small genus of trees in Africa and the Pacific Islands. A. bijuga, widely distributed in Oceanica is the "ifit" used in Guam as a cabinet wood and for general construction purposes.

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LEIOMYOMA OF ESOPHAGUS—REPORT OF CASE

I. A. BIGGER, M.D.,*
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and
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Benign tumors of the esophagus are relatively infrequent but, when identified during life, they have usually attained considerable size. In some of the cases that have been reported, the tumors have been very large and pedunculated and have not produced any significant symptoms related to the esophagus. The elasticity of the wall of the esophagus usually provides adequate space for passage of food into the stomach, and dysphagia is seldom a troublesome feature.

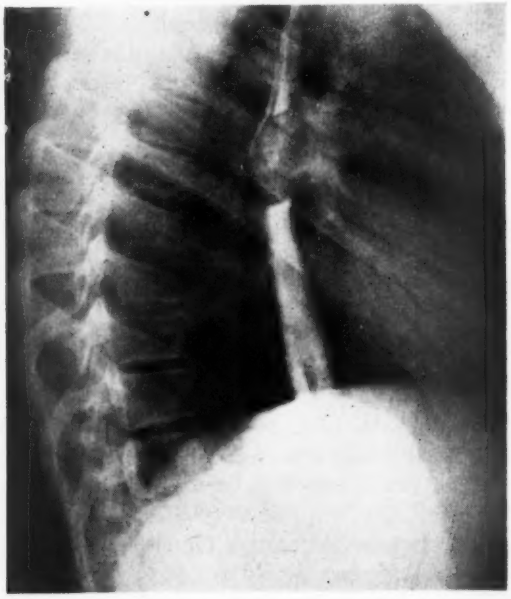

Fig. 1.—Roentgenogram showing smooth obstruction to passage of barium in mid-portion of esophagus.

The following case is interesting because of the relatively small size of the tumor and the severity of symptoms.

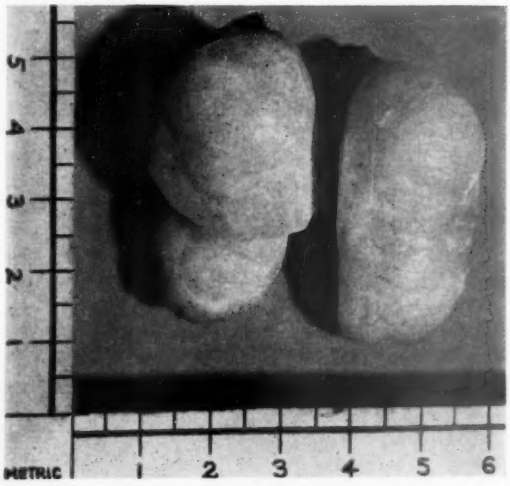

Fig. 2.—Gross specimen, leiomyoma of esophagus.

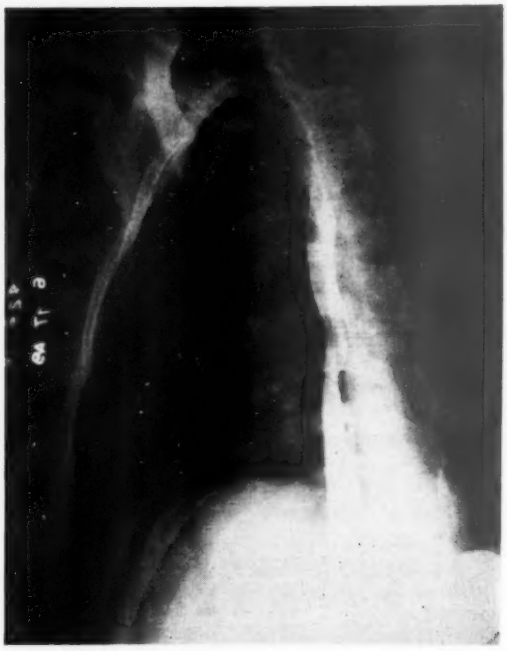

Fig. 3.—Roentgenogram showing normal esophagus post-operatively.

*Professor of Surgery, Medical College of Virginia.
‡Professor of Bronchoscopy, Esophagoscopy and Gastroscopy, Medical College of Virginia.
†Director of Student Health Service, Medical College of Virginia.

REPORT OF CASE

A student of pharmacy, aged 24 years, was examined on May 31, 1949. He had been well until three years previously when he had begun to have intermittent obstruction to passage of both solid food and liquids through the esophagus. The obstruction was noted in the mid-esophageal region, and because the patient had more difficulty when emotionally disturbed, his symptoms were attributed to "nervousness." He had never had complete esophageal obstruction, pain or regurgitation of food, although several times during sleep he had awakened with his mouth full of saliva.

Roentgenoscopic examination three months previously had revealed a smooth obstruction to passage of barium in the midportion of the esophagus (fig. 1). After this the patient was advised to limit his diet to soft food, on which regime he had been fairly comfortable.

Esophagoscopic examination on June 2, under intravenous anesthesia supplemented by insertion of an intratracheal tube, disclosed a sessile tumor covered with normal mucous membrane in the middle third of the esophagus. The mass protruded into the lumen of the esophagus from the left and anterior walls and was apparently 6 cm. in length. There was no evidence of ulceration, and no effort was made to remove tissue for microscopic study as the tumor was considered benign and probably muscular in origin.

Surgical removal of the tumor was advised, and on June 11, 1949, the tumor was removed from the esophagus, leaving intact the mucous membrane covering the mass (fig. 2). The patient was dismissed from the hospital eight days later, at which time he was free from symptoms, and roentgenoscopically barium passed through the esophagus without interruption (fig. 3).

Find Ethyl Alcohol Unsatisfactory Disinfectant for Wounds.

Ethyl alcohol, the ordinary alcohol of commerce and pharmacy, should not be used as a disinfectant in wounds or on raw surfaces of injured areas, according to a Salt Lake City doctor who made a study of the substance.

The antibacterial action of ethyl alcohol is neutralized by proteins present in the wound, says Dr. Philip B. Price of the University of Utah College of Medicine. (*Archives of Surgery,* March 1950).

Further he states that the alcohol is painful, injures wound tissues and delays wound healing. Also, simple solutions of ethyl alcohol are not satisfactory agents for cold sterilization of surgical instruments.

Seventy per cent alcohol (by weight) in water, however, is still believed to be the "solution of choice" for disinfection of the skin, he says. On healthy skin, this solution is powerfully destructive to germs and harmless to the body.

Women Are More Tearful Than Men.

Young women have more active lacrimation than young men. In other words, the female of the species can turn on the tears more copiously. Two Rochester (Minn.) ophthalmologists have proved it by examining the eyes of 114 males and 117 females. They report their findings in the February issue of *Archives of Ophthalmology.*

The study was made by Dr. John W. Henderson of the section on ophthalmology, Mayo Clinic, and Dr. Wendell A. Prough, fellow in ophthalmology, Mayo Foundation. They state that "Sex was a factor in the rate of flow of tears among young persons (16 through 29 years of age). Females exhibited a definitely greater flow of tears than males."

The normal flow of tears for men in this age group seemed to be slightly more than half that of women of the same age group, according to the doctors.

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ANTICOAGULANT THERAPY IN ACUTE MYOCARDIAL INFARCTION*

GEORGE B. CRADDOCK, M.D.,
Lynchburg, Virginia.

The use of anticoagulants in the treatment of patients with acute myocardial infarction has been accepted fairly widely at present. Encouraging reports have come from Peters, Guyther and Brambel[1], Parker and Barker[2] of the Mayo Clinic, and Nichol and Page[3] of Florida. Finally, in addition, there is the large series of Irving Wright and his committee, in which over eight hundred cases were studied with one-half serving as controls, and in which sixteen large and well known hospitals were used, such as Peter Bent Brigham Hospital and Massachusetts General Hospital in Boston, The New York Hospital in New York, Cincinnati General Hospital, etc.

In a small private practice, such as mine, and in a small charity service, such as that of the Lynchburg General Hospital, it is impossible to obtain more than a rough clinical impression of the use of anticoagulants in the treatment of acute myocardial infarction. Surely all of us, before we ever heard of the use of heparin or dicumarol in treatment, have seen patients extremely ill with this condition who recovered. Because of this fact, in order to prove the value of the use of anticoagulants, we have to turn to the literature where larger series of patients are studied.

First, what are we trying to accomplish with the anticoagulants? It is to prevent the complications of the myocardial infarction. Deaths which occur from the original infarct, from cardiac arrest, ventricular fibrillation, or cardiac rupture will not be prevented by anticoagulant therapy. But it is in the prevention of thrombo-embolic phenomena that the anticoagulants are believed to be useful. The three main thrombo-embolic complications are: (1) phlebothrombosis of the peripheral vein, as in the legs with pulmonary emboli; (2) a mural thrombus over the area of the infarcted heart wall, the thrombus being inside the ventricular cavity with resulting embolus to the brain, to the extremity, or to the mesentery; and (3) a second coronary artery thrombosis.

It has been found that in the first three weeks after the initial acute coronary artery thrombosis, the clotting time of the blood is actually reduced (i.e., tendency to clot has been increased); that in patients with myocardial infarction complicated by failure, digitalis[5,6,7] will also increase the tendency to clot; and also that a stagnant circulation will favor the formation of peripheral phlebothrombosis with peripheral emboli. So, a middle-aged patient who has been in bed with an acute myocardial infarction, his blood clotting time actually reduced by both the infarction and digitalis and his circulation rendered stagnant by slight or greater heart failure, is an ideal candidate for phlebothrombotic episode in his femoral or popliteal veins and complicating pulmonary embolus. Our surgical friends fear the complication even in much younger and more robust patients upon whom they have operated and take steps to prevent this by early ambulation, anticoagulents, or prophylactic vein ligation. Surely the use of anticoagulants (or vein ligation) is indicated to prevent this complication in our patients with acute myocardial infarction. Nay and Barnes[8], in the analysis of one hundred patients with acute infarction, found this complication of pulmonary embolus in fourteen.

The second thrombo-embolic phenomenon at which prevention with anticoagulant therapy is aimed is a mural thrombus, part of which breaks off, resulting in a peripheral embolus. This is really one of the saddest complications. A patient has had a severe infarction, appears to be doing well, then suddenly has a cerebral embolus with resulting hemiplegia or an embolus to his leg with resulting arterial occlusion, gangrene, and finally amputation. These complications are always terribly distressing. It is believed that prompt use of anticoagulants will prevent a mural thrombus with its dread systemic emboli.

The third thrombo-embolic complication is a second coronary artery thrombosis; it is believed that anticoagulant therapy is less likely to prevent this complication than the first two discussed.

Let us now look at the published results—see table. First, Parker and Barker[2] of the Mayo Clinic report fifty cases treated with dicumarol. These are compared with one hundred cases previously reported at

*Read before the South Piedmont Medical Society at South Boston, Va., November 9, 1949.

the Mayo Clinic by Nay and Barnes, which had no anticoagulant therapy and thereby serve as controls. Thirty-seven per cent of the controls had vascular complications and only seven per cent of the treated cases.

	Percentage of Thromo-Embolic Complications	Mortality Percentage
Peters et al.[1]		
Controls	16	20
Treated cases	2	4
Cases taking digitalis		
Controls	--	53
Treated cases	--	12.5
Nay and Barnes[8] *and Parker and Barker*[9]		
Controls (N&B)	37	13
Treated cases (P&B)	4	10
Griesman and Marcus[10]		
Controls	21	35
Treated cases	4	9
Cases taking digitalis		
Controls	29	53
Treated cases	0	20
Wright et al.[4]		
Controls	26	24
Treated cases	7.5	14.9
Mortality divided by age groups		
Under 50		
Controls	--	12
Treated cases	--	9
50 to 59		
Controls	--	12
Treated cases	--	11
60 to 69		
Controls	--	32
Treated cases	--	19
70 and over		
Controls	--	45
Treated cases	--	25

Also, in Peters'[1] report of sixty cases serving as controls and fifty cases treated with dicumarol, clinical embolism occurred in sixteen per cent of the control cases and two per cent of the treated cases. Mortality of control cases was twenty per cent and of treated cases four per cent.

And, finally, we have Wright[4] and others in their eight hundred case report. In this series, patients admitted on even days were not given anticoagulants while those admitted on odd days were treated with anticoagulants, age group being about the same. Thirty per cent of the treated group and twenty-three per cent of the control group were judged as severe infarctions. Over-all mortality was twenty-four per cent for controls, fifteen per cent for treated patients. Deaths preceded by one or more thrombo-embolic complications were ten per cent of controls and three per cent of treated group. In the breakdown of deaths according to age groups, under 50, 50-59, 60-69, and 70 and over, it was clearly shown that the greatest reduction of mortality in the anticoagulant treated group over the control group was in patients over sixty.

All of these reports point with good evidence to the real value of anticoagulant therapy in reducing greatly the thrombo-embolic complication.

Next, the method of using the two drugs may be discussed. Some workers start the patient on both heparin and dicumarol treatment, omitting the heparin as soon as the patient's prothrombin time is at the desired level, and continuing the dicumarol. Others use only dicumarol therapy, starting out with a large initial dose of 200-300 mg. the first one or two days, and following the dosage by prothrombin determinations. Another method is to use heparin alone, as is done by Loew[9], who uses heparin in a menstruum for prolonged action.

The control of dicumarol dosage by prothrombin time determinations is stressed by all who have written about this form of treatment. Most writers emphasize that daily prothrombin time determinations should be done and that comparison with control determinations should be made each day. With these figures and by a chart, the prothrombin determinations can be found expressed in percentage of prothrombin concentration. The Mayo Clinic recommends that ten to thirty per cent prothrombin concentration be held. Others recommend that the patient's prothrombin time be held at 2 to 2.5 times the control; that is, if the control time is fifteen seconds, then it is desired to have the patient's time thirty to thirty-seven and five-tenths seconds. Should the control time be over twenty seconds, it is felt that the supply of thromboplastin is not good, and a fresh supply should be obtained.

My experience has been confined to dicumarol. I "shoot" at obtaining an adequate prolongation of the prothrombin time as soon as possible, and I attempt to maintain the patient's prothrombin time 2 to 2.5 times as great as the control level.

The dangers of anticoagulant therapy are excessive hemorrhage. With careful observation and adequate laboratory procedures (clotting time for he-

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parin and prothrombin time for dicumarol) these complications are unlikely. Mild nose bleedings have been reported; also hematuria, and even cerebral hemorrhages. I have had one patient with dicumarol therapy have hematuria. This was not a patient with myocardial infarction, but a patient in whom dicumarol therapy was being tried for glaucoma at the request of an ophthalmologist.

Should the prothrombin time become too long (or the prothrombin concentration become too low), synthetic vitamin K (menadione) may be administered in 72 mg. dose intravenously or intramuscularly; and this will usually bring the prothrombin time to a safe range in twenty-four hours. If more urgent return of the prothrombin time is needed, prothrombin itself can be administered by giving a *fresh* blood transfusion.

For overdosage of heparin, a fresh blood transfusion may be administered, and also *protamine*[9] has been recommended to counteract the heparin. I have had no experience with this.

A few cases, illustrative of the hazards of emboli, can be discussed.

First, in 1938, while serving as assistant resident in medicine at the Medical College of Virginia, in the emergency room of the old Memorial Hospital, I saw a patient—a white male about sixty-five years of age—complaining of violent abdominal pain. He gave a history of an attack of severe chest pain twelve to fifteen days previously when he was confined to bed by his physician. The present attack of severe abdominal pain had begun an hour or two before his admission to the hospital. This patient was very ill. He had generalized abdominal tenderness, and bloody material was found on the examining finger on rectal examination. Exploratory laparotomy revealed the entire small intestine to be gangrenous. The patient died the next day, and autopsy revealed a healing myocardial infarct with a mural thrombus, part of which had broken off and been carried by the blood as an embolus to the mesenteric artery, causing the gangrene of the intestine. Prompt anticoagulant therapy probably would have prevented this catastrophe.

Another case is W. E. P., a white male, age twenty-nine, who had an acute posterior wall myocardial infarction on September 29, 1941, and was hospitalized October 3, 1941. He was treated with the conventional bed rest, and on October 8, 1941, his fifth hospital day, I was called because the patient was suffering with severe, excruciating pain in the right leg. Examination revealed that the right leg and lower third of the thigh were very painful, pale, and cool, and no pulse could be felt in the dorsalis pedis, posterior tibial or popliteal artery. He was given morphine, atropine, whiskey, and one vial (10 c.c.) of heparin in glucose solution intravenously. This was all the heparin in Lynchburg at that time. To our pleasant surprise—about two hours later the patient suddenly improved; the pain in the leg disappeared; the color and warmth returned to the foot; and the pulse returned in the dorsalis pedis artery, etc. This occurred at the time that he was being seen by surgeons considering an embolectomy.

Another interesting case is Mrs. D. L. P., eighty-nine year old white woman, who was seen on April 19, 1946, for dyspnea, orthopnea, palpitation, and ankle edema. Examination revealed a patient in congestive heart failure with auricular fibrillation, a rapid ventricular rate (130), and congestive rales at each lung base. This patient was hospitalized and digitalized—still her heart rate remained rapid. Electrocardiogram revealed an acute posterior wall myocardial infarction. Since she had never been confined to bed, she was still allowed to get up to the chair each day. However, on May 7, 1946, the eighteenth hospital day, a slight fever (99.6°F.) was noted; a positive Homan's sign was elicited in the right leg, and tenderness was present on pressure over the right calf, indicating a complicating phlebothrombosis. Since we were not using dicumarol for myocardial infarction, a surgical ligation of the femoral vein was done by Dr. J. E. Haynsworth without any complications. Her convalescence was otherwise uneventful; and now, three years later, she, at the age of ninety-two, is still alive and able to be about. I do feel, however, that a pulmonary embolus at that time would have been fatal.

Another case, W. B. T., white male, age fifty-eight, is described because he is the first patient on whom I have used dicumarol treatment. He came to me at the Virginia Baptist Hospital August 31, 1947, referred by his physician because of severe, excruciating pain beginning the night before, eased with morphine. This patient walked into the hospital. Electrocardiogram revealed an acute anterior myocardial infarction. That afternoon, pain recurred

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and was severe, and a loud pericardial friction rub was heard. He was never in clinical shock nor in congestive heart failure. Dicumarol treatment was begun the day of admission, and as soon as an adequate prolongation of the prothrombin time was obtained, his pain ceased, and his general condition improved. It was this apparent clinical improvement with dicumarol that encouraged me to continue its use.

I have four other case reports in which dicumarol was used and in which our results were not so happy.

J. M., white male, age fifty-nine, came to my office for physical examination on April 23, 1948. His family history was terrible from the point of hypertensive vascular disease. He had had hypertension for fifteen years, but in the last six weeks he had had substernal pain on exertion; and, at times, even at rest. This man's blood pressure was 240/160, eye grounds showed grade 3 arterial changes. Electrocardiogram showed change of left axis deviation with inverted T wave in leads 1, 2, 3, and precordial leads. A few days later I was called to see the patient because of pain in substernal area which was unrelieved by nitroglycerine and required an opiate. Several other attacks required opiates, and finally it was necessary to teach his wife to give a hypodermic to keep him easy. All during this time his electrocardiogram showed no further changes. However, on June 7, 1948, a more severe attack occurred; electrocardiogram showed an acute anterior wall infarction. He was hospitalized on June 7, 1948, and dicumarol therapy was begun on the same day. In spite of a therapeutic level obtained, as evidenced by his prothrombin time (prothrombin concentration 25%), the patient died on June 10, 1948, his third hospital day. Autopsy revealed a massive myocardial infarct, but there was no evidence of a mural thrombus.

Mrs. L. W., white woman, age seventy-three, suffered a massive myocardial infarction on April 27, 1949. It appeared she would die the night of the attack. After this, she improved and seemed to be heading for a recovery. Although dicumarol treatment was begun at once, a sufficient lowering of her prothrombin time was not obtained as soon as we wished, and she had an embolus to the left leg on April 29, 1949, two days later. By raising the dosage, by lumbar sympathetic block, and intravenous alcohol injections, the coldness, pain, and pallor disappeared from the foot. However, on May 2, 1949, seven days after admission, and while her prothrombin concentration was eleven per cent (and patient's time was 2.5 of the control's), she had another myocardial infarction and died within forty-five minutes. An autopsy could not be obtained. I feel that this patient had a second myocardial infarction while on adequate anticoagulant treatment.

R. L., white woman, age sixty, was seized with excruciating substernal pain about 10:30 P. M. April 30, 1949. She had had severe hypertensive cardiovascular disease for nine years, blood pressure ranging from 240/140 to 189/110, and her eye grounds showing severe vascular changes. She was relieved by intravenous morphine and atropine, sent to the hospital by ambulance and placed in oxygen tent. Dicumarol treatment was begun, and an adequate prolongation of her prothrombin time was obtained and kept through her hospital stay. However, she did not do well; left ventricular failure occurred and recurred in spite of digitalization, oxygen, and mercurial diuretics. Death occurred on May 25, 1949, her twenty-fifth hospital day, from congestive heart failure. Adequate prothrombin concentrations were maintained.

Mr. V. F. M., white male, age fifty, was first seen by me July 8, 1949, in consultation for a massive arterial embolus to his right leg. His myocardial infarction had occurred six days earlier and he had not received anticoagulant treatment. In spite of dicumarol, sympathetic nerve block, etc., he required an amputation on July 17, 1948.

SUMMARY

A brief review is given of a series of cases of acute myocardial infarction treated with anticoagulants reported in the literature. The reason for anticoagulant treatment, i.e., the prevention of the thromboembolic complications of acute myocardial infarction, is discussed. These thrombo-embolic complications are: (1) peripheral phlebothrombosis with pulmonary emboli; (2) mural thrombus with systemic circulation emboli; and (3) a second coronary thrombosis. It is believed that anticoagulant therapy is effective in preventing these complications if it is given adequately, and it is believed to be especially indicated in patients with acute myocardial infarction who are over sixty years of age and particularly those in whom digitalis therapy is used. A few cases

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of myocardial infarction illustrating thrombo-embolic complications are given.

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411 Allied Arts Building.

Report New Treatment for Carbon Monoxide Poisoning.

Treatment of suffocation from carbon monoxide gas by injections of procaine hydrochloride, a local anesthetic, is reported in the April 8 Journal of the American Medical Association. Seventeen of a group of 23 patients who received the new treatment made good recoveries, according to Drs. Edwin W. Amyes, John W. Ray and Norman W. Brockman of the College of Medical Evangelists and University of Southern California School of Medicine.

The remaining six patients either died or did not fully recover. In this group the drug was given long after the exposure to carbon monoxide, or there were additional complicating factors, according to the doctors.

All except one of the 23 patients had become unconscious in a room in which there was no ventilation and where an open gas flame was burning.

Procaine hydrochloride previously had been used by doctors in France to treat prolonged coma due to carbon monoxide poisoning. They reported startling improvement in a few cases, the Los Angeles doctors say. Treatment of this condition theretofore had been unsatisfactory.

Studies indicate that carbon monoxide suffocation results in a disturbance of the blood supply of the brain. The Los Angeles doctors believe that part of the effect of procaine hydrochloride in carbon monoxide suffocation may be due to stimulation of the brain.

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PENICILLIN SENSITIVITY WITHOUT CUTANEOUS MANIFESTATIONS

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The recent literature has contained many articles devoted to a study of penicillin sensitivity. Most of these have concerned themselves with cutaneous reactions. This most frequent manifestation of penicillin sensitivity has been studied exhaustively; the types of reactions have been classified and methods of desensitization worked out. The accompanying systemic symptoms, when present, have been those commonly associated with serum sickness and have consisted chiefly of chills, fever, headache and gastro-intestinal disturbances. It is assumed by most authors that these systemic symptoms are allergic phenomena.

We wish to present two unusual cases in which this allergic basis is not so obvious and in which there were no cutaneous lesions.

Case 1: S. W., a 21-year old married white woman, had her first attack of right upper quadrant pain in September, 1947. At that time she was 8 months pregnant. She delivered spontaneously at term, on October 20, 1947, and her postpartum course was uneventful. Since then she had frequent attacks of right upper quadrant pain which radiated to the back and which was accompanied by nausea and vomiting. These episodes usually lasted about 3 days. There was a questionable history of jaundice.

In February, 1948, she was admitted to another hospital while suffering from one of these attacks. Gallbladder x-rays taken at this time were reported as not showing any pathology.

She was admitted to Lakeview Hospital in April, 1948, with typical gallbladder colic. Gallbladder series taken 3 days after admission revealed the presence of many small stones. She was allowed to go home to take care of some personal affairs and on June 1, 1948, she returned for cholecystectomy. Her past history did not reveal any previous administration of penicillin.

Admission physical examination was negative except for soreness in the right upper quadrant and minimal left lower quadrant tenderness, which had been present since the patient's parturition. Laboratory work was negative. There was no clinical or laboratory evidence of jaundice.

On June 2, 1948, cholecystectomy and choledochostomy were performed. The gallbladder contained many small cholesterol stones and showed gross and microscopic evidence of chronic cholecystitis. The common duct was dilated and contained one small cholesterol stone.

The patient was given parenteral fluids with vitamin supplements post-operatively. Procaine penicillin 300,000 units daily was ordered. On the morning of the first post-operative day the temperature was 99° F., having risen to 99.2° F. during the night. There was enough nausea to necessitate the continued administration of parenteral fluids. On the second post-operative day the nausea was much more severe and the patient exhibited extreme lassitude. On the afternoon of the third post-operative day her temperature abruptly rose to 102° F. On the following day this elevation was maintained and that night the temperature rose to 103.2° F. The patient's marked drowsiness and lassitude persisted and became more severe. No etiology could be found. There was no upper respiratory infection. Chest plate was negative and there was no evidence of wound infection.

On the assumption that the fever was due to some concealed infection, the patient was placed on crystalline penicillin 100,000 units every 3 hours. The fever and lassitude continued unabated. It was not until the sixth post-operative day that the possibility of these symptoms being due to penicillin was considered.

An emergency white count was ordered and found to be within normal limits. All penicillin was discontinued. The response was dramatic. The patient's temperature returned to normal in less than 24 hours and remained normal thereafter. The disappearance of the lassitude and nausea corresponded to the drop in temperature and there were no further complications for the remainder of the patient's hospital course. She was discharged on the twelfth post-operative day on a regular diet.

At this time she presented a negative reaction to both the immediate and delayed intradermal cutaneous tests of penicillin sensitivity. The technique employed was that advocated by Peck[1] (1.2 mg. of crystalline penicillin G in .1 cc. of isotonic solution of sodium chloride).

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When last interviewed, one year after operation, she was taking an unrestricted diet without any difficulty.

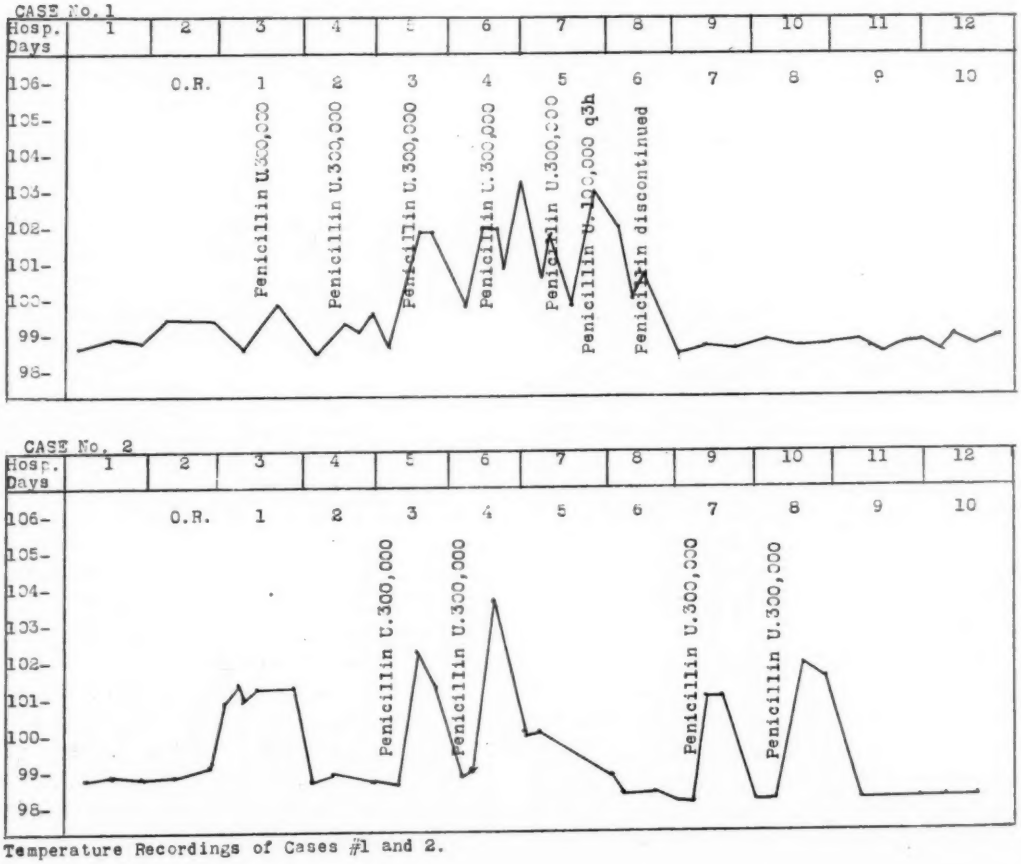
Discussion: This patient's reaction was of the immediate type, in that some symptoms of sensitivity (nausea and lassitude) appeared within 24 hours after administration of the first dose of penicillin. The similarity to a post-operative infection with fever appearing three and one-half days after operation is a remarkable coincidence. This similarity led to an increase in the penicillin dosage, which was followed by a corresponding increase in the severity of the symptoms. This case demonstrates the danger of the routine post-operative use of penicillin. It also demonstrated the advisability of ruling out penicillin sensitivity as soon as possible in all cases of post-operative fever, where the drug has been given.

A white blood count is an excellent aid when absence of cutaneous lesions make the diagnosis of febrile penicillin reactions difficult. It is interesting to note that in this instance there was no eosinophilia.

Case 2: A 42-year old married white woman, mother of 5 children, was referred to the hospital by Dr. Edward Joyner, of Suffolk, Va. Six months prior to admission she had received 3 courses of oral penicillin, each course consisting of 6 tablets of 50 milligrams each. This medication was employed in the treatment of upper respiratory infections.

She had suffered for about 12 years from symptoms suggestive of gallbladder disease and of late these symptoms had become more severe, to the point where she was having frequent attacks of incapacitating gallbladder colic.

Cholecystogram performed elsewhere a month before admission here revealed the presence of a poorly functioning gallbladder and stones. This patient



Temperature Recordings of Cases #1 and 2.

was an extremely nervous, apprehensive individual. Her mother had died after gallbladder surgery and she was afraid of a similar fate. This marked apprehension, which at times could be classified as panic, was often severe enough to make her afraid to visit her doctor's office. The severity and frequency of her attacks of gallbladder colic finally rendered her willing to submit to surgery, but did not alleviate her extreme apprehension concerning the procedure.

Physical examination on admission revealed an extremely nervous, apprehensive, middle-aged woman. Her temperature, pulse and respirations were not remarkable. Her blood pressure was 110 mg. systolic over 80 mg. diastolic. There was deep tenderness to palpation in her right upper quadrant. Laboratory work was negative.

On the morning of the second hospital day her breakfast was withheld and an infusion of 5% glucose in water was started. Enough sodium pentothal was added to this solution to render the patient semi-comatose and she was taken to the operating room where a G.O.E. anesthesia was substituted for the sodium pentothal solution. Cholecystectomy was performed and a thickened gallbladder, which evidenced many pericholecystic adhesions and which contained two large calcium bilirubin stones in its ampulla, was removed. The common duct was not remarkable and was not explored.

On the first post-operative day the patient was calm and her apprehension seemed to be greatly allayed. She did, however, present signs of early atelectasis as evidenced by right sided basal rales, diminished breath sounds and fever to 101.6° F. She was persuaded to sit up and forceful coughing was instituted. She brought up a large amount of sputum and subsequent to this her temperature returned to normal. It remained normal for the next 24 hours. Procaine penicillin—300,000 units—was given on the morning of the third post-operative day, and that afternoon her temperature spiked to 102.4° F. The next day she was given another 300,000 units of procaine penicillin and this was followed by another rise of temperature to 103.6° F. Both of these elevations were accompanied by severe psychic reactions of a paranoid nature. The patient became extremely fearful and apprehensive. She had frequent auditory hallucinations in which she was informed that the operation was going to be repeated and was threatened and upbraided in many ways. Clinical examination of the chest and of the wound did not reveal any etiology for the fever. Chest x-ray taken at this time was negative.

On the afternoon of the day of the second febrile reaction a blood count was performed and the white count and differential were found to be within normal limits. A diagnosis of penicillin sensitivity was made and the drug was discontinued. Subsequent to this her temperature returned to normal and her paranoia cleared up, though she remained a nervous, apprehensive woman. After 24 hours of normal temperature with no hallucinations or paranoid reactions, a test dose of 300,000 units of procaine penicillin was given. This was followed by a rise of temperature to 100.8° F. and a return of the auditory hallucinations and paranoid reactions described above.

On the following morning a second test dose was given and this was followed by a similar rise in temperature to 100.1° F. and a similar return of psychic symptoms. After this, penicillin was again discontinued and there was an immediate return to normal temperature and a rapid disappearance of the psychic symptoms. The patient was allowed to go home on the following day. Subsequent temperature readings at home remained normal and though the patient continued to be quite nervous and had to have sedation prescribed by her family physician, there was no return of the paranoid symptoms described above. Intradermal tests of penicillin sensitivity were negative.

Discussion: This patient presents another febrile reaction to penicillin without associated cutaneous manifestations. The symptomatology appeared shortly after administration of the drug. She also presented interesting psychic manifestations. Whether these latter symptoms were a reaction to penicillin *per se*, or simply the result of a febrile reaction in an already highly excited and apprehensive patient cannot be determined. It is interesting to note, however, that the initial febrile reaction which was due to atelectasis was not accompanied by any paranoia. Her psychic reaction bears a remarkable resemblance to those described by Kline and Highsmith,[2] who reported the only case of psychosis resulting from penicillin sensitivity that we have been able to find in the literature. Their patient had almost identical auditory hallucinations of a threatening nature.

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These authors ascribed their patient's psychotic manifestations to "edematous lesions in her brain" similar to those associated with the accompanying severe urticaria and arthralgia. This explanation would not fit our case. It would, however, be possible for her to develop allergical lesions in her brain without manifesting similar skin lesions, just as the systemic symptoms of serum sickness need not be accompanied by skin lesions.

This case is also a reminder that it is advisable to rule out penicillin sensitivity in all cases of unexplained post-operative fever. Post-operative fever in the presence of a normal white count in a patient receiving penicillin is presumptive evidence of sensitivity to the drug. In this case also there was no eosinophilia.

SUMMARY

We have presented two cases which demonstrate that penicillin sensitivity need not be associated with cutaneous manifestations. The dangers of the routine post-operative use of penicillin are emphasized, and a toxic psychosis following the administration of the drug is described. In the second instance the fact that the fever and paranoid symptoms returned when treatment with the drug was resumed was strong evidence that penicillin was the etiologic agent.

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May we suggest that you review the ads in each issue of the MONTHLY and, when occasion arises to prescribe products featured or use the facilities offered, tell them you saw their ad in your Journal.

Warns of Danger in Industry From Beryllium.

Recent reports from doctors and other research workers emphasize danger of poisoning in industry from beryllium, Dr. C. M. Peterson, Chicago, secretary of the American Medical Association's Council on Industrial Medicine, said today.

Dr. Peterson cited articles in the April issue of *Archives of Industrial Hygiene and Occupational Medicine*, in which it is stated that exposure to beryllium, a metallic element, produces both a severe, acute lung disease which resembles pneumonia and a chronic form of lung disease with a fatality rate of from 10 to 35 per cent.

A report in this issue of the Archives by Dr. James K. Scott and Herbert E. Stokinger, Ph.D., Robert H. Hall, Ph.D., L. T. Steadman, Ph.D., Norman J. Ashenburg, M.S., and George F. Sprague, III, M.S., of Rochester, N. Y., concerning tests on animals reveals the high toxicity of beryllium.

"Not only is beryllium unquestionably a toxic agent but it is toxic in such small quantities as to be among the most toxic chemically of all elements yet investigated," this research group points out, adding:

"These amounts give rise to acute effects. It is reasonable to believe that still smaller quantities produce the chronic disease in human beings and that 'safe' levels of beryllium exposure ultimately may be set well below one microgram per cubic meter of air."

INVERSION OF THE UTERUS—REPORT OF A CASE

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This important obstetrical accident, inversion of the uterus, is quite rare, often seen only once or twice in the lifetime of an obstetrician. Since the first case was reported by de Vitry in 1847, less than a thousand cases have been reported. The incidence is about one in five thousand cases, according to recent authors,[2-4-5] in place of the former belief of one in one hundred thousand cases.[1] The incidence of recurrence in subsequent pregnancies has been estimated at about twenty-six per cent.

CLASSIFICATION

Inversion of the uterus has been classified by Phaneuf[6] as follows: Complete, in which the corpus passes through the cervical ring; or incomplete, where the fundus does not extend farther than the cervix. Also, this accident is acute, which occurs immediately postpartum before the cervical ring has formed; sub-acute, which is found after the cervical ring has formed; and chronic, which has existed a month or more postpartum and in which involution has taken place.

ETIOLOGY

It has been taught in medical schools that this condition occurs due to the mismanagement of the third stage of labor, to an adherent placenta, or to a pedunculated tumor, and is caused by undue pressure on the fundus, or traction on the cord. Others[7] believe that it occurs spontaneously due to the contraction of the muscle fibers of the fundus with relaxation of the lower uterine segment. It is felt that increased intra-abdominal pressure due to coughing or vomiting and the abnormal distribution of fibers in the fundus where the placenta was attached leads to the formation of a dimple on the fundus of the uterus. Phaneuf describes the mechanism as follows: "After any portion of the uterus becomes indented to a considerable extent, the rest of the organ seizes this invaginated portion as it would a foreign body, and in attempting to expel it, turns inside out". The role of oxytocics is cited by Kaltreider[7] who, in injecting ergotrate intravenously during a cesarean section, saw the uterus invert through the incision.

*Read before a joint meeting of the Smyth County-Washington County Medical Society, July, 1949.

CAUSES[8]

Predisposing causes are as follows:

1. Pathological conditions of the uterus and its contents:
   a. Adherent placenta
   b. Short cord
   c. Congenital weakness or anomalies
   d. Weakening of the uterine wall at the placental attachment
   e. Congenital failure of improper innervation
   f. Chronic metritis
   g. Effects of difficult labor, frequent pregnancies, or abortions
   h. Fundal implantation of the placenta
   i. Tumors.
2. Functional conditions of the uterus:
   a. Inertia
   b. Relaxation of all parts of the uterus
   c. Disturbances of the contraction mechanism.

Exciting causes are as follows:

1. Manual removal of an adherent placenta
2. Increase in intra-abdominal pressure.
3. Mismanagement of the third stage of labor:
   a. Improper fundal pressure
   b. Traction on the cord
   c. Injudicious use of oxytocics.

SYMPTOMS

The chief symptoms are well known, *hemorrhage, pain, and shock,* the shock usually predominating. Shock is attributed to the stretching of the nerves in the broad ligaments and the peritoneum, which are caught in the inversion, and also to a compression of the ovaries. These theories are advanced since the shock is out of proportion to the hemorrhage. Differentiation from pedunculated tumors and uterine prolapse is usually simple.

TREATMENT

The inverted uterus has been treated by many methods. All agree that the urgent indications are

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control of hemorrhage and combating of shock. Early attempts to replace the uterus by taxis before recovery from shock are responsible for the large mortality. Some advise treatment of hemorrhage and infection, ignore the inversion, and treat the inversion when it has reached the chronic stage. Others, including the authors of most textbooks, advise immediate replacement before shock ensues.

The methods of replacement differ. Barrett[9] advises removing the placenta if adherent, and grasping the fundus in the palm of one hand and with the other hand replacing the uterus and to wait until the uterus contracts against the hand. O'Sullivan[10] describes a method of using intravaginal hydraulic pressure with a douche nozzle. Irving[11] recommends the Huntington operation be done without attempting vaginal manipulation. This operation replaces the uterus in its proper position through an abdominal incision. Reposition from within the abdomen is accomplished with relative ease, with a minimum of risk, and with very satisfactory permanent results. This operation is performed as soon as possible after the hemorrhage is controlled and the patient is recovering from shock. Blood and plasma are essential. The procedure consists of abdominal section and replacement by traction with repeated grasps of Allis forceps, the last inverted portion of the uterus being replaced first. There is no vaginal manipulation and suturing of the restored uterus is not necessary. This operation is advised only in the first forty-eight hours. Irving reports seven consecutive cases of acute inversion without a mortality.

Subacute inversion, occurring shortly after the accident, requires judgment, as the majority of deaths occur in this stage. Some believe that it is best to be conservative and treat hemorrhage, shock, and await involution of the uterus. Mortality[8] of conservative treatment is five per cent as opposed to a thirty per cent mortality when interference is attempted in this stage.

The chronic inverted uterus is replaced by several methods, some antiquated and some new. Attempts to reinvert the uterus from below with gauze packs, cup-shaped repositors, abdominal operation as suggested by Haultain, and vaginal operations as advocated by Spinelli, are all used.

MORTALITY

The mortality of this accident is high, from fourteen to twenty-five per cent. Half the deaths occurred in the first hour, and nine-tenths occurred within the first two hours. Later results (Phaneuf) show a mortality of between five and ten per cent, due to the immediate treatment of hemorrhage and shock and the use of the Huntington operation.

CASE REPORT

Case 1. (H. L. F., #65475) An 18 year old white primipara, admitted to the Johnston Memorial Hospital in active labor on April 14, 1949, at 9:30 P.M. History was entirely negative and her prenatal course was normal. No difficulties were expected. Labor was uneventful, but rapid, the first and second stage of labor lasting but seven hours. Nitrous oxide was given with her pains and ether at the time of delivery. A living male infant was delivered at 4 A.M., weighing seven pounds. The placenta was allowed to separate spontaneously and was delivered eleven minutes later. A moderate amount of bleeding occurred, which was controlled with fundal massage, pituitrin 1 cc., and ergotrate gr. 1/320 intravenously. The patient was returned to her room with minimal bleeding and the uterus firm. At 5 A.M. the patient, after vomiting, noticed gushes of blood. Suddenly at 6:15 A.M. the patient went into shock. She received 1,000 cc. of blood, three units of plasma, and oxygen, in conjunction with routine shock therapy. The diagnosis of uterine inversion was made by the attending obstetrician and efforts were made to reposit the uterus vaginally, but to no avail. Examination of the patient revealed her blood pressure to be 40/0, pulse 136, weak and thready. She slowly improved under treatment and when her shock was improved another attempt at vaginal reposition failed. Since the patient was in fair condition it was deemed advisable to attempt reposition by the abdominal route. At 8:25 A.M. a Huntington operation was performed under a minimal amount of ether anesthesia. The abdomen was opened under a low midline incision and the uterus was seen completely inverted. The adnexa on each side was grasped with Allis forceps and by means of traction and gentle kneading, the uterus was reposited. Pituitrin, 1 cc., was injected directly into the uterus, which contracted nicely. The abdomen was closed in the usual manner and the patient's condition was seen to improve immediately.

Then the patient was placed in the lithotomy position and prepared with merthiolate. The uterus and vagina were then packed. The entire procedure took less than twenty minutes and the patient responded well, her pressure rising rapidly to 110/60 and her pulse dropping to 100.

She was placed on large doses of penicillin, another 1,000 cc. of blood given, and her postoperative course was normal. Temperature rise was to a maximum of 100 degrees for two days, then returned to normal. No further bleeding occurred. The packing was removed on the third postoperative day and she was discharged on April 23, 1949, in good condition.

SUMMARY

Inversion of the uterus is best treated by early replacement of the uterus either by the abdominal or vaginal method after shock and hemorrhage have been controlled.

More stress should be placed on the use of oxytocics, vomiting, and a predisposition to inversion, than on mismanagement of the third stage of labor.

Newer methods of treatment, chemotherapy, transfusions, and immediate replacement of the uterus have lowered the mortality of this accident to between five and ten per cent.

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New Books.

The following are among books recently received by the Medical College of Virginia Library which are available to our readers under usual library rules:

Best and Taylor—Physiological basis of medical practice. 5th ed.
Burch and Reaser—A primer of cardiology.
Current therapy. 1950.
Dubos—Louis Pasteur, Free lance of science.
Felter, West and Zetzsche—Surgical nursing. 5th ed.
Florey—Antibiotics.
Hawley and Cardon—The art and science of nutrition. 3rd ed.
McLester—Nutrition and diet in health and disease. 5th ed.
Marriott—Water and salt depletion.
Pearson—Emotional disorders of Children.
Salter—Chemical developments in thyroidology.

Exposure to Carbon Tetrachloride Fumes May Cause Blindness.

Three cases of blindness developing in industrial workers exposed to the fumes of carbon tetrachloride are reported in the March 1950 *Archives of Industrial Hygiene and Occupational Medicine.*

One man was employed in a plant making automatic razors, another as an electrician in an aluminum extraction plant, and a woman in a dress manufacturing establishment, according to Dr. Adelaide Ross Smith of the Division of Industrial Hygiene and Safety Standards of the New York State Department of Labor, New York. She states that in one patient, visual defects cleared almost completely after about a month of treatment, but in the remaining two only some sight had returned four and seven years after exposure.

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COLD HEMAGGLUTINATION AND OTHER STUDIES IN MULTIPLE SCLEROSIS*

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and
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Recently attention has been directed to the study of blood in multiple sclerosis. Putnam[1] has suggested an abnormality of the clotting mechanism. Simon[2] has demonstrated an increased coagulability following the intravenous injection of typhoid vaccine or the subcutaneous injection of epinephrine. This increase of coagulability was 3 times more prolonged in the multiple sclerosis group than in the control group.

Because of the frequency of exacerbations of symptoms of multiple sclerosis following undue exposure of the patient to cold, it was felt that a controlled study of cold hemagglutination would be interesting. Coagulation time and prothrombine time determinations have also been done and are reported. Three groups of patients are included in this study. None of the patients reported had a history of virus pneumonia within the 18 months prior to the blood studies.

Group 1 consisted of 8 patients having a diagnosis of multiple sclerosis. One case was considered chronic and progressive without clear cut remissions and exacerbations. One case was studied on the first day of an exacerbation of symptoms. The remainder of the cases were considered to be in remission. All patients have been observed sufficiently long for the diagnosis to be beyond reasonable doubt.

Group 2 consisted of 9 patients having neurological illnesses other than multiple sclerosis. Included in this group were the following diagnoses: unclassified degenerative disease of the central nervous system (3), hemangioma of the cerebellum, amyotrophic lateral sclerosis (2), encephalomalacia of the left side of the brain due to trauma, Froelich's syndrome, and polyradiculoneuronitis.

Group 3 consisted of 7 patients without evidence of neurological disease. Most of the patients had a psychiatric diagnosis.

COLD HEMAGGLUTINATION

The technique of the hemagglutination test of Kettel as quoted by Stats and Wasserman[3] was utilized. Serum dilutions of 1:10 through 1:2560 were used. Readings were made at 4, 10, 15, 22, 30 and 37 degrees centigrade. The tubes were examined macroscopically only.

No agglutination was observed in groups 1 or 2. There was one "plus-minus" reading in 1:10 dilution at 4 degrees centigrade from a patient of group 3 having a diagnosis of anxiety reaction.

COAGULATION TIME

Coagulation time was determined, using the Lee and White method, 5-8 minutes being considered normal.

Coagulation time of the group 1 multiple sclerosis patients varied between 3 minutes 30 seconds and 7 minutes, with an average of 4 minutes 56 seconds.

The coagulation time of the group 2 patients having other neurological diseases varied between 4 minutes 30 seconds and 7 minutes 15 seconds, with an average of 4 minutes 45 seconds.

The coagulation time of the group 3 control patients varied between 2 minutes 15 seconds and 6 minutes 30 seconds with an average of 4 minutes 32 seconds.

From these figures it is noted that there were no significant changes in the coagulation time in any of the three groups.

PROTHROMBIN TIME

Prothrombin activity was estimated by the Quick method and reported in percentage, 50 per cent and above being within the normal range.

Prothrombin activity in the multiple sclerosis

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group ranged from 50 to 100 per cent, with an average of 70 per cent.

Prothrombin activity in the group having other neurological diseases ranged between 19 per cent and 75 per cent, with an average of 35.4 per cent.

Prothrombin activity in the control group ranged from 34 per cent to 75 per cent, with an average of 51.1 per cent.

The average prothrombin time of the multiple sclerosis patients and controls was within normal limits, while that of the miscellaneous neurological disease group was significantly below normal.

SUMMARY

Cold agglutination tests, coagulation time, and prothrombin time estimations were performed on a small group of patients having multiple sclerosis. Several stages of the disease were represented. Similar tests were done on a group of patients having diagnoses of miscellaneous neurological diseases other than multiple sclerosis and also on a control group without neurological disease. No abnormal titer of cold agglutinins was found in any group. The coagulation time of the patients having multiple sclerosis was approximately the same as that for the other two groups. Average prothrombin activity of the multiple sclerosis and control groups was within normal limits. It was below normal in the group of other neurological conditions.

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Two Antihistaminic Drugs Fail in Controlled Test Against Colds.

As a cure for the common cold, two antihistaminic drugs taken within 24 hours after the onset of symptoms are no better than placebos. This is the conclusion of a group of U. S. Army Medical Corps officers who made a controlled study of the drugs (tripelennamine hydrochloride and chlorothen citrate) at West Point.

An effort was made to ascertain whether patients receiving medicaments early in the course of their illness were more likely to be cured than those starting treatment later.

"Patients who began treatment within 24 hours after the onset of a head cold were about as likely to be among those reporting no help as among the group reporting cures," the researchers say. (*J.A.M.A.*, May 13.) They added: "This was approximately equally true of patients receiving all forms of treatment [including placebos]." The antihistaminic drugs appear, however, to lessen nasal discharge.

There has been a paucity of controlled studies of the effects of antihistaminic drugs on the common cold, the authors point out. Any form of treatment of the common cold is influenced by so many factors that only a controlled study provides results on which valid conclusions can be based.

The West Point study made by Lieut. Col. R. J. Hoagland, Capt. E. N. Deitz, Lieut. P. W. Myers and Lieut. H. C. Cosei and, included 190 patients, all healthy young men in the military service. Medical attention was given before duties were begun, eliminating the temptation to report to sick call to avoid duties. Physicians prescribing treatment and making the follow-up examinations 72 hours after treatment was begun were unaware of what medicines the patients were receiving.

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A CASE OF POST-TRAUMATIC PARKINSONISM TREATED WITH MYANESIN*

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A review of the literature reveals a comparative dearth of authentic case reports of post-traumatic Parkinsonism and considerable controversy with regard to cranial injury as an etiological factor in this condition. A few case reports of this condition appear in the literature citing peripheral nerve trauma as an etiological factor and electrical injury[1], which have led to additional controversial opinions.

Observers of reported cases[4] have agreed that the following criteria must be present to establish a diagnosis of this disease entity: (1) Trauma must be severe enough to be able to cause some cranial lesion; (2) The patient who suffered from trauma must not have been a previous subject to peripheral symptoms; (3) The disease process must not follow the trauma immediately, but its development ought to be preceded by some prodromal cerebral symptoms which would then develop a characteristic clinical picture; (4) The interval between trauma and the onset of Parkinsonism must be neither too short nor too long; and (5) From the time of traumatism and the development of organic symptoms, the course of the disease must be uninterrupted.

The similarity of the clinical syndrome of Parkinsonism following encephalitis lethargica and that following cerebral trauma can hardly be ignored nor can it be attributed to coincidence. The pathogenesis of post-encephalitic Parkinsonism has been established as due to lesions in the basal ganglia and the midbrain areas. It is reasonable to assume that petechial hemorrhages, though not demonstrable following head injury, occur in the extrapyramidal system producing the same clinical picture.

REPORT OF A CASE

Mr. H. K. G., a veteran of World War II, was referred to our Clinic for treatment of a condition which had been previously diagnosed as hysteria. A review of the Army medical records showed that this veteran was involved in a vehicular accident on December 17, 1944, and two hours later was given medical attention at a battalion aid station where the diagnoses of deep laceration of the scalp; fracture, dislocation, compound, middle finger, left hand; and laceration, deep, upper third, right leg, were made. He was treated for these conditions and on December 25, 1944, was transferred to a general hospital for continued treatment. During these periods of hospitalization, there is no record nor any history of an infectious process nor any history of an attack of influenza. He remained as a convalescent patient until his discharge to duty on April 20, 1945, four months after injury, at which time there was noted a "weakness of the grip, left hand, with an intermittent tremor of the fingers which could be controlled to a certain extent voluntarily." He did not seek nor receive any medical attention from the time of his discharge in November of 1945 up until the early part of 1948 when he was seen on an outpatient basis at the University of Virginia, Charlottesville, Virginia, where a diagnosis of early Parkinsonism was suspected and rabellon prescribed.

At the time he was first seen at our Clinic in the spring of 1948, the writer was struck by the clinical picture presented. There was a spastic gait on the left with dragging of the left lower extremity. The left upper extremity was held in a semi-flexed position rigidly at the side with a pronounced tremor of the left hand and forearm, and typical pill-rolling movements of the fingers of that hand. The facies were masked and there was increased salivation with periodic drooling. There was a suggestion, but not typical, of a festinating gait when the veteran was asked to walk at a rapid pace. Examination revealed rigidity of the lower extremity and typical cogwheel rigidity was elicited in the upper extremity. A sample of the patient's handwriting, which was typical of that seen in Parkinsonism with considerable tremor and elision, was obtained and recorded.

This individual was, and is, employed by a large department store in the South as a supervisor of the men's clothing department. Of necessity this caused

*Sponsored by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

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Medical Society of Virginia Cancer Committee

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Medical School Building, University, Virginia

Reprints of this and preceeding Bulletins may be obtained from this office

June 1, 1950

Case Reports

A 55-year-old man, while under treatment for syphilis, developed a pain in the left knee which rapidly became so severe as to be incapacitating. His doctor told him he had arthritis, gave him a series of "shots" and finally resorted to injection of the tibial nerve in the popliteal space. Eight and a half months after the knee pain first developed, a hard mass was felt deep in the mid-thigh. The patient became alarmed and sought the advice of another physician. He had an X-ray examination done which demonstrated an extensive osteogenic sarcoma involving the distal half of the femur.

A 29-year-old man, an employee in an industrial plant where company-union financed medical facilities are provided, complained of pain and stiffness in the right shoulder of three years' duration and swelling in the right deltoid area of two years' duration. The initial symptoms had appeared a few months after the shoulder had been badly bruised. During the 18 months after first seeing his plant physician, the patient reported to him frequently for treatment with liniment and hot applications. But the pain and stiffness grew slowly worse, and a mass became distinctly visible. During the next six months, the mass grew rapidly and the area became red and tender. By this time, the man was no longer able to use his shoulder and applied for hospital admission. X-ray examination, *the first he had had,* showed a large calcified mass on the lateral aspect of the humerus and extensive destruction in the upper two-thirds of the bone. The pathologist's report on a biopsy specimen was chondrosarcomatous degeneration of a myositis ossificans.

Comment: (1) Running through all these case reports of avoidable delay in cancer diagnosis is the recurrent theme of failure to utilize readily available diagnostic measures — physical diagnosis, biopsy, and in the above cited instances, X-ray. Prompt X-ray examination, definitely indicated from the histories alone, would have insured early diagnosis of both bone tumors, would have saved both patients months of unnecessary suffering, might have saved their lives, and certainly would have saved their physicians a great deal of embarrassment and remorse.

(2) In both of these cases, treatment to relieve symptomatology was carried on for months without any effort being made to find the cause of the symptoms. It is difficult to think of anything more diametrically opposed to modern medical standards.

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him to come in contact with a number of employees whom he supervised, in addition to a large number of customers and clients. This caused the patient considerable concern and he became extremely self-conscious about his condition.

The veteran was placed on myanesin therapy in the form of Tolserol(R) (0.25 gm.), four tablets three times a day for a total daily dosage of three grams, and requested to report to this Clinic once weekly for a determination of progress. After one week of treatment, although the improvement was not dramatic, it was indeed remarkable. He was continued on this form of treatment with the dosage as stated and the following criteria were used to denote progress and/or improvement; (a) The patient's subjective symptoms and attitudes; (b) The reactions of his friends, relatives and employees; (c) Posture and gait; (d) Status of muscle groups of the involved extremities; (e) Extent and excursion of tremors and pill-rolling movements; (f) Emotional mobility of the facial muscles; (g) Amount of salivation; and (h) Serial handwriting samples.

After approximately three months of therapy, the veteran reported that the stiffness of his extremities had considerably diminished, he no longer walked with a dragging gait, his relatives, friends and employees complimented him on the marked change in his condition and general appearance, he was no longer self-conscious, and people on the street did not stare at him as previously. The veteran walked in an almost erect position with only slight spasticity on the left and the tremors of the left hand were reduced to a minimum. The increased salivation was practically eliminated and the veteran's facial expression became emotionally mobile so that his facies assumed a normal appearance. The serial samples of handwriting unquestionably demonstrated an improvement with elimination of the Parkinsonism tremor with only an occasional elision.

SUMMARY AND CONCLUSIONS

1. A case of post-traumatic Parkinsonism due to head injury is presented.
2. The similarity of this syndrome to that following encephalitis lethargica cannot be questioned.
3. The absence of any record or history of an acute infectious process or influenza eliminates post-encephalitis as a result of encephalitis lethargica.
4. The criteria suggested as diagnostic of this condition have been met.
5. It is felt that the production of this type of clinical picture is due to petechial hemorrhages in the corpus striatum and substantia nigra.
6. The extent to which the peripheral injury to the hand contributed to the development of the syndrome cannot be determined at this time, but it probably played some part.
7. Myanesin is of definite value in the treatment of this condition.

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Dr. Cibelli is now at 252 Seventh Avenue, New York City.

CLINICOPATHOLOGICAL REPORTS

From the Case Records of the Medical College of Virginia and the University of Virginia Hospitals.

HARRY WALKER, M.D., *Editor*
WILLIAM KAY, M.D., *Associate Editor*

CASE NO.: B-65550

A 17 year old colored female entered St. Philip Hospital because of shortness of breath and swelling of her ankles. She had apparently been in good health until two years before admission when she developed swollen ankles during the 7th month of her first pregnancy. She was put to bed by her physician and given large white tablets (sulfa?). In a few days her symptoms disappeared and she apparently had an otherwise uneventful pregnancy. She then remained well until two months before admission when she again developed swelling of the ankles and abdomen accompanied by shortness of breath on exertion. She had no orthopnea, however, and stated that she slept well. She was again put at bed rest and given several medications, but apparently did not improve significantly and was referred to the hospital.

During the two months prior to admission the patient had had anorexia with some nausea and vomiting and occasional headaches. She denied having had any joint pain, epistaxis or night sweats during her present illness or at any time in the past. Her last menstrual period had occurred three months prior to admission.

PHYSICAL EXAMINATION: Temperature 99°, pulse 116, respiration 16 and blood pressure 124/78. The patient was well developed and well nourished and in no acute distress, lying flat in bed. The skin and mucous membranes appeared normal without eruptions or petechiae. The teeth were in excellent condition; the tonsils were hypertrophied, cryptic and injected with a thin grayish secretion over the tonsils and the posterior pharyngeal wall. The breath was described as foul. The submaxillary glands were enlarged bilaterally. There was mild neck vein distention. The chest appeared symmetrical and expanded normally. The left lung was clear. On the right posteriorly and laterally there was flatness to percussion with diminished breath sounds and fremitus below the level of the 6th rib. No rales were heard. The apex impulse was located in the 7th intercostal space 14 cm. from the mid sternal line. There was a systolic thrill and a harsh blowing systolic murmur at the apex. In addition one observer detected a harsh systolic murmur in the 3rd left intercostal space with a questionable systolic thrill in this same area and another observer detected a diastolic apical murmur. All were agreed that a gallop rhythm was present. The abdomen was ovoid with "probable ascites". The liver was enlarged to the umbilicus and non-tender. There was 2+ pitting edema of the ankles. Pelvic and rectal examinations were negative, though the uterus was not palpated.

LABORATORY DATA: Voided urine, acid, specific gravity 1.017, trace of albumin, 50-75 WBC, 1-2 RBC and an occasional granular cast per h.p.f. Three days later a catheterized specimen showed a specific gravity of 1.003 and 0-3 WBC per h.p.f. Hemoglobin was 14 grams, red blood count 6,120,000, white blood count 7,700, 52 polys, 45 lymphs, 1 basophil and 2 monos, with considerable variation in size and shape of the RBC. Total proteins were 5.3, albumin 2.6, globulin 2.7. Flocculation was negative. A chest plate revealed generalized cardiac enlargement with a cardiothoracic ratio of 62% and density in the right lung base compatible with fluid. An electrocardiogram: Rate 115 per minute, rhythm regular. The P-R interval was 0.19 and Q-S 0.09; Lead I—small R, deep slurred S; Lead II—moderate R, moderate slurred S; Lead III—slurred R, diphasic T; Lead IV and Lead V—moderate R, moderate S, diphasic T. The sedimentation rate was 4 mm. in one hour, the NPN 27 mgm. %, and the blood sugar 128 mgm. %.

Following admission the patient was placed at bed rest, given a low salt diet and salyrgan intravenously. Digitoxin, 1.4 mgm., was administered in divided doses over a 24 hour period and continued at 0.2 mgm. every morning. Thoracentesis on the day following admission yielded 1,200 cc. of dark straw-colored fluid with 370 cells per cubic mm., 61 lymphs, 9 polys and 30 endothelial cells. Specific gravity 1.012. Another 1,000 cc. of a similar fluid was obtained the following day. Fluoroscopy following removal of the fluid showed generalized

cardiac enlargement with good cardiac pulsations. By the third hospital day the patient was apparently asymptomatic while at rest. The temperature remained normal, the pulse varied between 80 and 100, the respirations from 20-24. The pleural effusion gradually returned. Digitoxin was discontinued on the 7th hospital day and on the following day aspirin, 15 grains every four hours, was started. The patient remained in essentially the same condition and offered no complaints until early in the morning of the 14th hospital day when she suddenly became quite restless and complained of pain all over her body. The pulse was noted by the nurse to be rapid and weak, the respirations were rapid and shallow and the blood pressure was recorded as 120/100. She was given 100 mgm. of demerol at 3:45 A. M. and became quieter. At 8:00 A. M. the patient was found to be comatose with cold clammy skin. Reflexes were normal. She was given 1,000 cc. of 5% glucose in saline and appeared to respond somewhat in that she regained consciousness, but she was unable to give any history. One hour later she again lapsed into coma and died.

ADDITIONAL STUDIES: Numerous blood cultures were reported as negative, but one culture was reported as non-hemolytic streptococcus. Smears and cultures of the pleural fluid were reported as negative for Tbc and other organisms. A repeat electrocardiogram on the sixth hospital day showed: Rate 95, rhythm regular, P-R 0.22, Q-S 0.08; Lead I—low R, deep S; Lead II—Broad P, moderate R, deep S; Lead III—low notched R, negative T; CR_1—wide notched QRS, negative T, CR_4 and CR_5—High R, diphasic T. Axis plus 120. A repeat blood count on the seventh hospital day was as follows: RBC 5,160,000, WBC 8,550, hemoglobin 12.5 grams, differential essentially unchanged.

DISCUSSION BY DR. HOWARD M. MCCUE, JR.*

I will presume that all of you received a copy of the protocol and, therefore, I will dispense with reading it through and will proceed to discuss the case as we go along.

This was a seventeen year old colored girl admitted to the hospital with the chief complaint of dyspnea and edema. Dyspnea can be either cardiac or pulmonary in origin or can have other causes. However, when dyspnea is associated with dependent edema it certainly suggests congestive heart failure and I would presume that this dyspnea was on a cardiac basis. We see in the history that when pregnant two years previous, she had swelling of her ankles during the seventh month of pregnancy. She was given some white pills at this time and the presumption is that they might have been one of the sulfonamides. I do not think we can draw any definite conclusion from this, as we do not know what the medication was and we do not know any of the other clinical findings at that time. It has been well established that the blood volume is largest in the seventh month of pregnancy and this is the one time, other than at the time of delivery, that congestive failure is most likely to develop in pregnant cardiacs; and my only suggestion would be that she might have had some heart failure at that time. Two months prior to admission, she again developed ankle edema, swelling of the abdomen and dyspnea on exertion. The exertional dyspnea would certainly seem to be cardiac in origin. The only other thing I think our attention should be directed to is the presence of fairly marked edema and the absence of orthopnea and this brings to mind the possibility of the edema being on some other basis such as portal obstruction. We, also, have the additional symptoms of anorexia, nausea and vomiting which should direct our attention to the gastro-intestinal tract and, of course, we must include with the gastro-intestinal tract the possibility of liver disease.

On admission to the hospital, physical examination showed tachycardia, without rapid respiration. This is certainly unusual for ordinary congestive heart failure. Tonsils and pharynx were covered by a grey secretion. No other details are given, except that the patient had foul breath. I would presume that this is an ordinary throat infection, probably an ordinary tonsilitis but, we must remember the possibility of diphtheria. Sub-maxillary glands were enlarged. The point is not clearly stated but I would presume that this means lymph glands and not salivary glands. I would presume that this was the lymphadenopathy associated with the throat infection. There was increased venous pressure as shown by the neck vein distention and there were signs of fluid in the right chest. In the examination of the heart there was marked enlargement, a harsh blowing systolic murmur (this is a hard combination to accept, the murmur being both harsh and blow-

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ing). The murmur was associated with a palpable thrill at the apex. One observer is reported to have heard a diastolic murmur at the apex and another observer described a systolic murmur and thrill in the third left intercostal space. A gallop rhythm was present. Obviously auscultation of the heart is a matter of opinion. Since we cannot listen to the heart in this case, we must accept the description of others and try to make our deductions from this. I would presume that there was a loud, harsh systolic murmur at the apex associated with a thrill. The presence of a diastolic murmur at the apex is apparently questionable and although I admit that the murmur of mitral stenosis is one of the most difficult to hear, since it was heard by only one observer, I believe we must discount this finding. In the presence of a loud, harsh apical systolic murmur, I do not feel that an examiner could distinguish clearly that there was a separate or second harsh systolic murmur at the third left intercostal space. It would be more a decision as to the point at which the murmur is loudest and the consensus of opinion seems to have been the apex. After interpreting these findings they are indicative of organic changes in the mitral valve, mitral insufficiency with regurgitation. The diagnosis of mitral stenosis in such a case would depend almost entirely on the presence or the absence of the characteristic mid or late diastolic murmur since marked mitral insufficiency might produce the same cardiac changes as regards cardiac outline, electrocardiographic pattern, etc. I choose to disregard the questionable diastolic murmur and conclude that only mitral insufficiency was present. The gallop rhythm present with this rapid rate would certainly lead me to believe there was myocardial change. In the abdomen the liver was markedly enlarged and there was questionable ascites. It is stated that the pelvic examination was negative, except that the uterus was not felt. The presence of ascites would prevent the successful palpation of the uterus. I suppose we should mention here the possibility of Meigs' Syndrome which would be a tumor of the ovary with unilateral pleural effusion. However, I should regard this as most unlikely in a patient aged seventeen. There was a moderate amount of dependent edema of the ankles.

The laboratory data revealed that the urine was more or less non-contributory. Blood showed polycythemia with aniso and poikilocytosis and without leucocytosis. A sickle cell preparation was negative. I believe the abnormality of the blood cells is of some interest. I doubt that it can be explained entirely on the basis of heart failure. Serum proteins were quite low, the albumin being the lowest and with a reversal of the A G ratio. I believe this is, also, of some interest and in association with the blood changes found, directs our attention to the possibility of liver disease. Chest X-ray study showed marked enlargement of the heart and fluid at the right base.

The electrocardiogram is reported as showing tachycardia with regular rhythm and findings compatible with right axis deviation. I think it would be better if we take a look at these tracings. I believe they are available and I wonder if we might have them projected on the screen. In this first tracing we have obvious tachycardia at a rate of about 115. P-R .19 sec. QRS .11 sec. Lead I—Low R. Deep S. QRS is upright in Lead II and III. In chest leads there is relatively high R in V-1 with a small S and moderate R and moderate S in V-4 and V-5. These changes are compatible with both right ventricular hypertrophy and strain or incomplete bundle branch block. It is impossible to differentiate in an electrocardiographic pattern between right ventricular strain and incomplete right bundle branch block. The second electrocardiogram has a regular rhythm, rate approximately 95. P-R .22 sec. QRS .11 sec. No essential change from the previous tracing except the P-R is obviously prolonged. The sedimentation rate is reported as normal. I think this finding is of some interest, as is the normal white count. Fasting blood sugar is reported as 128. I believe this is a little higher than normal. I believe this is a finding of some interest in that it again draws my attention to the liver NPN which was normal.

Her course in the hospital was apparently not too eventful. Thoracentesis was done on two occasions. 1,200 cc. and 1,000 cc. were removed. Specific gravity being 1.012 would make this transudate, as the specific gravity is less than 1.017. An exudate would have a specific gravity of 1.018 or better. Following the removal of fluid, fluoroscopic examination showed good cardiac pulsation. It was their opinion that there was no pericardial effusion. Digitoxin was given and apparently had very little effect and so on the eighth day aspirin in fairly large doses was started. Patient was apparently getting along reasonably well, still having no orthopnea and very lit-

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tle respiratory distress until the fourteenth day, at which time she became quite restless and complained of pain all over. It is very difficult for me to explain this widespread pain, unless it be of a central origin. I think the restlessness might well be on a central nervous system basis. She was reported as being stuporous, cold and clammy with weak pulse and shallow respiration but her blood pressure was 120/100. She was given 1,000 cc. of glucose and saline and roused up out of the coma to some extent but shortly thereafter succumbed. This would certainly not be characteristic of a cardiac death. In the first place, a patient who was comatose, cold and clammy from cardiac failure would certainly not have a blood pressure of 120/100. In fact she would perhaps have no blood pressure that could be determined by the usual instrument, and the administration of 1,000 cc. of glucose and saline intravenously would probably do no more than precipitate pulmonary edema or at least make the situation worse whereas in this case it seemed to revive her for a short period. We have the additional laboratory study of one blood culture out of many reported negative showing a non-hemolytic strep. I would feel that this was almost certainly a contaminant and probably has no particular significance in the case.

To review the situation, we could consider diphtheria with diphtheric myocarditis. No cultures from the throat are reported but I cannot conceive of diphtheria producing the described murmur and I consider this an unlikely diagnosis. You might consider sarcoidosis. However, there was lymphadenopathy limited only to the neck, the spleen was not enlarged and the course of the disease is generally very chronic and not such as is reported here. We might consider one of the collagen group of diseases of which the most likely would probably be disseminated lupus. She did not have leukopenia, there were no skin lesions and although the murmur might be explained on the basis of Liebman-Sachs endocarditis, I do not believe that this is a tenable diagnosis. Congenital heart disease should be considered. However, the murmur and thrill being localized primarily at the apex in association with right axis deviation and right ventricular strain on the electrocardiogram would be inconsistent as pulmonic stenosis or auricular septal defect, tetralogy of Fallot or Eisenmenger's complex do not produce an apical systolic murmur but rather a para-sternal murmur. The fluoroscopic findings are inconsistent with tetralogy and I do not believe we are dealing with a congenital defect in this case. I have excluded sub-acute bacterial endocarditis on the basis of negative blood cultures; also there was no leukocytosis and very little fever. Cardiac cirrhosis is a consideration but this condition is really quite uncommon and usually develops only after a long-standing congestive heart failure, not measured in weeks. To conclude, I believe that this patient had acute tonsillitis with a recurrence of rheumatic fever, that she had rheumatic heart disease with mitral insufficiency and an exacerbation of active rheumatic carditis. The absence of leukocytosis and a normal sedimentation rate are unusual for such a condition but not unknown. We have seen cases develop rheumatic carditis go down hill and die without ever developing anemia, leukocytosis or an elevated sedimentation rate, and I do not believe that excludes the diagnosis of active rheumatic carditis. It is almost unknown to see a young person of this age with rheumatic heart disease develop congestive heart failure except during active carditis irregardless of the valve lesion. For that reason I feel sure that active rheumatic infection was present. However, there is considerable doubt in my mind as to whether this patient died a cardiac death. It certainly was a very unusual one if she did die of congestive failure and because of the changes in the red blood cells, the elevated fasting blood sugar, the low serum proteins with reversal of the A G ratio and the history of repeated anorexia, nausea and vomiting; I believe that this woman had hepatic vein thrombosis and that she died a toxic death, most likely due to liver failure and possibly contributed to by the salicylates. A liver death would certainly explain the coma, the cold, clammy skin, weak pulse, etc., and the presence of a measurable blood pressure and, also the fact that she was somewhat revived by intravenous glucose rather than pushed over the brink. It is my feeling that although she had rheumatic carditis and heart failure, she probably succumbed to the liver changes.

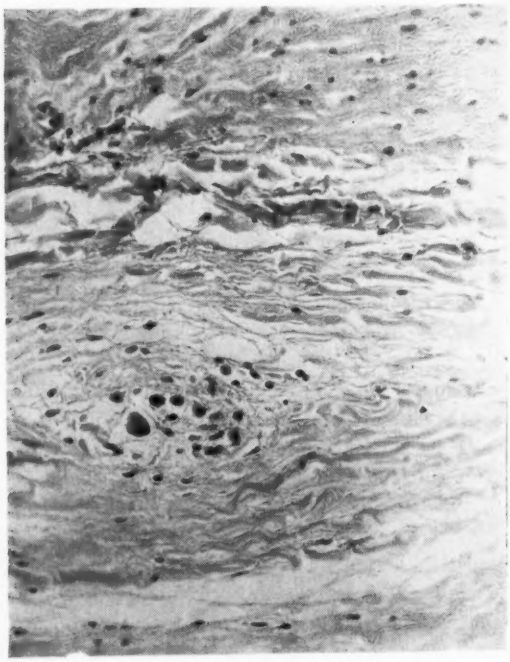
HOSPITAL DIAGNOSIS: (1) Rheumatic heart disease with pleural effusion (2) Mitral valvulitis (3) Congestive failure.

DR. MCCUE'S DIAGNOSIS: (1) Rheumatic heart disease with active rheumatic carditis (2) Mitral insufficiency (3) Congestive heart failure (4) Liver insufficiency.

XUM

PATHOLOGICAL REPORT: DR. W. H. TALBOT*

The heart weighed 530 gms. and showed some hypertrophy with dilatation of the ventricles. The circumferences of the valves were: tricuspid 13. Ocm. pulmonary 8.1 cm., mitral 14 cm. (admitted 3 fingers easily) and aortic 7.0 cm. The leaflets of the mitral and aortic valves were moderately thickened throughout and the chordae tendinae of the mitral valve were thickened with some loss of webbing. The endocardium of the left atrium, in some places was thickened, white, opaque and corrugated. Microscopically, Aschoff nodules were found throughout the myocardium. The endocardium of the left

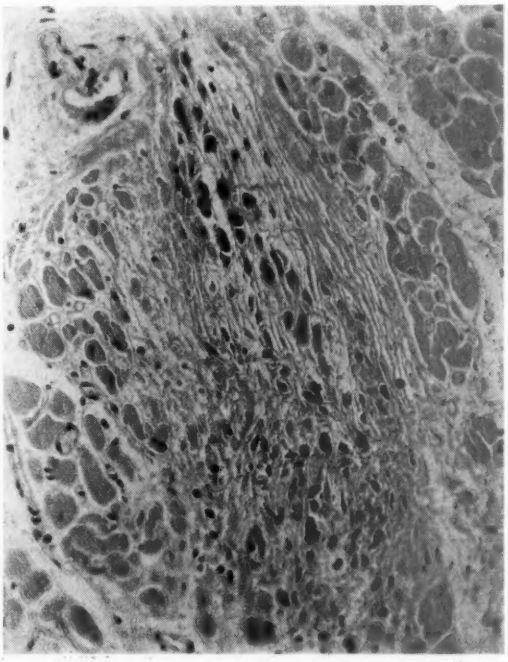


Microscopic view of section of aorta showing Aschoff modules in adventitia.

atrium was thickened, vascularized and infiltrated by mononuclear cells. A section from the adjacent aorta showed an Aschoff nodule in the adventitia. The changes just described are indicative of an active rheumatic carditis, superimposed on a previous healed rheumatic endocarditis.

The right pleural cavity contained 1,500 cc. of a clear, slightly sanguineous fluid. The lungs were increased in weight (1035 gms.) and showed in different areas edema, intra-alveolar hemorrhages and atelectasis.

Section through heart showing evidence of previous rheumatic disease of mitral valve and endocardium of left auricle.



Microscopic view of section of myocardium showing active rheumatic disease (Aschoff nodule).

*Instructor in Pathology, Medical College of Virginia, Richmond.

The liver showed severe chronic passive congestion with central necrosis. No thrombi were present in either the intrahepatic or extra hepatic portions of the portal veins. Four hundred cc. of a clear amber fluid was present in the peritoneal cavity.

Other interesting findings were the gross and microscopic picture of the tonsils which showed acute tonsillitis with erosion.

PATHOLOGICAL DIAGNOSIS:

1. Active rheumatic heart disease superimposed on a previous healed rheumatic endocarditis.
2. Pulmonary Congestion and edema with focal intra-alveolar hemorrhage and atelectasis, bilateral.
3. Pleural effusion, right (1,450 cc.) and peritoneal effusion (400 cc).
4. Chronic passive congestion of liver with central necrosis, severe.
5. Acute tonsillitis with superficial erosion.

Find Chloromycetin Effective Against Tularemia.

Successful treatment of six cases of tularemia, also known as rabbit fever, with chloromycetin, one of the newer antibiotic drugs, is reported by a group of doctors from the University of Maryland School of Medicine, Baltimore—Robert T. Parker, Robert E. Bauer, Howard E. Hall and Theodore E. Woodward, and Leonard M. Lister, a medical Student, *J.A.M.A.*, May 6.

The disease is acquired from wild rabbits and other wild animals and insects. It occurs as a local skin lesion and as a generalized infection with fever. Both streptomycin and aureomycin previously have been shown to be valuable in treating tularemia.

Advances in Nutrition Promise Greater Vigor and Longer Life.

Newer advances in nutrition promise better control of disease, greater vigor and longer life, according to Dr. James R. Wilson, Chicago, secretary of the American Medical Association's Council on Foods and Nutrition.

Enrichment and fortification of cheap staple foods, such as bread, milk and oleomargarine, addition of iodine to table salt and discovery of the B complex vitamins were cited by Dr. Wilson as major achievements in nutrition which are making important contributions to health and vigor.

There is evidence that good nutrition has been important in producing the increase in height observed in the United States during the past 30 years, and that it may play an important role in delaying the degenerative changes of aging, he pointed out.

Practically all scientific knowledge of nutrition is relatively new, he said. The vitamin series dates from the work of Dr. Elmer V. McCollum at the University of Wisconsin in 1909. Dr. McCollum isolated and named vitamin A and vitamin B_1. Isolation of vitamin B_{12} and its use to prevent degeneration of the nervous system in pernicious anemia is an achievement of the last few years.

On the frontiers of nutrition, the search for additional useful vitamins and minerals continues and research is being carried on in geriatrics (the science of aging) and plant genetics.

Effective application of scientific knowledge of nutrition largely depends on housewives, Dr. Wilson said. As "administrators of civilization" they are important in bringing advances in nutrition into practical use.

Dr. Wilson emphasizes these rules to follow daily for good nutrition at any age above infancy:

1. Eat an egg and at least one serving of another protein food.
2. Use whole grain or enriched bread and other whole grain or enriched cereal products.
3. Make sure the salt in the kitchen is iodized unless you live near the sea coast or eat sea foods liberally.
4. Drink pasteurized milk (a pint for adults, a quart for children and old persons—vitamin D enriched for all persons who get little sunlight).
5. Eat at least two servings of green leafy or yellow vegetables and at least one serving of citrus fruit or tomatoes and other fruits or vegetables containing vitamin C.
6. Use butter or enriched oleomargarine.

XUM

MENTAL HEALTH

JOSEPH E. BARRETT, M.D.,
Commissioner, Department of Mental Hygiene and Hospitals.

The Commonwealth's Plan for Reimbursement for Hospitalization.

It is interesting to note that nothing new in principle was legislated or instituted by the State in the Commonwealth's present plan of reimbursement for hospitalization in State mental hospitals under the provisions of Act 536, of 1948, which is now in force.

In November, 1769, George III, the Governor, Council, and Burgesses of the then General Assembly passed a law entitled "An Act to make provision for the support and maintenance of idiots, lunatics, and other persons of unsound mind", being Chapter XXVIII of the Laws of Virginia, Hening, Volume VIII, page 678. This Act authorized the purchase of a parcel of land not in excess of four acres convenient to the City of Williamsburg, and the erection of a building. The Honorable John Blair, William Nelson, Thomas Nelson, Robert Carter, Peyton Randolph, Robert Carter Nicholas, John Randolph, Benjamin Walker, John Blair, Jun.; George Wythe, Dudley Diggers, Jun.; Lewis Burwell, Thomas Nelson, Jun.; Thomas Emerald, and John Tazewell were named as trustees for the hospital to be known by the name and style of the Court Directors of the public hospital. Section VIII of this Act is as follows:

> "VIII. *And be it further enacted, by the authority aforesaid,* That the said Court of Directors are hereby empowered and required to receive such person into the said hospital, and, from time to time, to make and ordain such rules and orders for the better government of such person, according to his or her quality, and the allowance made out of his or her estate, as to them shall seem necessary or expedient. And the said court of directors are hereby directed and required to keep distinct and proper accounts of the expenditure of all such monies which shall be paid into their hands, to be laid before the General Assembly when the same shall be called for."

The provision for the maintenance of inmates in the hospital to be paid from their estates where able, continued from the inception of the Act in 1769, with very few changes in the statute, until 1906.

This Colonial Act, however, failed to set up an agency to collect the amounts due the hospital from the estates of the inmates.

There is now a division in the Department of Mental Hygiene and Hospitals, an established Agency, authorized under the present law, whereby "the estate of any patient is first legally liable". However, if such patient's estate is inadequate to meet the requirements and pay $40.00 per month, then the husband is liable for his wife or children, and the children in turn are liable for their parents; provided the children are sixteen years of age or over and have the ability to pay. All of this being discretionary with the Commissioner to accept less than $40.00 per month stipulated. Where the Commissioner is satisfied that a real hardship is imposed upon any of those legally liable, no charge is made. In other words, the result of the present law is to see that the estate or those legally liable and who are financially able, meet the full requirements and pay the $40.00 per month. In this way added services and facilities should be provided for better care of our mentally ill; thus, no one is imposed upon or made to contribute to this good cause unjustly.

The Indiana Council for Mental Health has recently completed a survey in which information received from 41 states shows that each of these states, with the exception of Illinois, makes a charge for the maintenance of patients in their state mental hospitals. The charges range from $20.00 per month to a maximum of $3.00 per day for general care. In New York State, in cases where a patient can afford the price of private care the charge is from $200.00 to $300.00 per month. Otherwise, their charges are flexible from year to year and their maximum charge is $75.00 per month. The rate charged in New York State is not specified by law, but by consideration of direct and indirect costs. In California the charge is flexible with a maximum of $3.00 per day. The California charges are based on a combination of current per capita cost and estimated per capita for ensuing fiscal year.

The present Act covering hospitalization in the Virginia State mental hospitals is proving effective and the response of the public is very gratifying.

PUBLIC HEALTH

L. J. ROPER, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Disease Control of the State Department of Health for April 1950 as compared with the same month in 1949 and for the period of January through April 1950 as compared with the same period in 1949, is as follows:

	April 1950	April 1949	Jan.-April 1950	Jan.-April 1949
Typhoid and paratyphoid	4	11	24	24
Diarrhea and dysentery	222	215	1,174	1,099
Measles	499	5,452	1,012	15,421
Scarlet fever	85	78	451	317
Diphtheria	11	10	79	52
Poliomyelitis	3	1	13	9
Meningitis	14	11	60	40
Brucellosis	10	6	23	20
Rocky Mountain spotted fever	0	1	0	1
Tularemia	2	0	18	7

THE DIAGNOSIS OF POLIOMYELITIS

As we come to the beginning of the season when we can expect an increase in the number of cases of poliomyelitis reported in Virginia, we naturally review the experience of last year with the hope that it may cast some light on the probable experience of this year. In tabulating reported cases we find difficulty in evaluating the cases that may be variously classified as sub-clinical, abortive, or non-paralytic. Should they be tabulated as poliomyelitis or should only those cases be recorded that resulted in definite paralysis?

For prophylactic reasons during the poliomyelitis season, particularly if there is high prevalence in the community, it is right that every suspect case should be regarded as poliomyelitis until positive diagnosis is reached. It is recognized that early diagnosis and the establishment of prompt and adequate medical care are of fundamental importance. Fortunately the National Foundation for Infantile Paralysis provides liberally for this pre-diagnostic service.

The diagnosis of acute paralytic poliomyelitis is relatively simple. There is usually a history of febrile illness accompanied or followed by flaccid paralysis. There is increase in the number of cells and protein in the cerebro-spinal fluid. Stiffness of neck and back are often associated.

In cases without paralysis various possibilities must be considered including the encephalitides, cerebro-spinal meningitis, tuberculous meningitis, brain tumor, or the accompanying meningeal signs which may accompany any acute infection in young children. In the young infant with scurvy the limbs sensitive to movement may simulate poliomyelitis while arthritis of the spine is another condition to be ruled out. It must be remembered that an increase of mononuclear cells and protein in the spinal fluid occurs in other conditions (encephalitis, mumps, otitis) as well as in poliomyelitis.

The presence of spasticity with a positive Babinski eliminates poliomyelitis and suggests brain tumor, brain abscess or multiple sclerosis.

The most certain means of diagnosis is the isolation of the virus from the stools or pharyngeal washings of the patient. Howe reports that virus may be recovered from stool specimens for weeks after onset of symptoms and from nasopharyngeal washings within six days of onset. Since, however, the facilities for such virus isolation are strictly limited, this is not a practical procedure for the average case. What is needed is a skin test such as the Tuburculin and Schick Test, or an agglutination test such as the Widal Test in typhoid fever.

With limited facilities for the diagnosis of poliomyelitis it is important for parents and physicians to maintain awareness during the period of poliomyelitis in the community. Too often with a sick child a day or so passes before the family is sufficiently alarmed to call a physician and a day or two may elapse before the physician recommends hospitalization.

One thing is certain. Every child with fever should be confined to bed and even if in a few days he seems well, still certain precautions should be taken. These include the avoidance of excessive activity, fatigue, chilling, overheating.

It is of diagnostic importance to determine the interval between the initial febrile state of the disease and manifestation of central nervous system involvement.

Upon making a presumptive diagnosis of poliomyelitis the physician should present to the parents as accurately and clearly as possible the expected sequence of events. He must attempt to avoid misunderstanding, apprehension and panic. The later willingness of patient and parents to cooperate in follow-up care may be influenced by the proper handling of the early stages of his disease.

XUM

MEDICAL SOCIETY OF VIRGINIA

PUBLIC RELATIONS

HENRY S. JOHNSON, *Director*

Democracy and Socialism Discussed

Following a meeting of District Councillors of the 8th Congressional District in Arlington, May 5 an evening program was presented to the medical and lay leaders of the 8th and 7th Congressional Districts.

The main feature of the evening program was an address by Mr. Leonard E. Read, President of the Foundation for Economic Education on the subject —"Students of Liberty". He was introduced by the Hon. H. W. Smith, Congressman of the 8th Congressional District.

Mr. Read's talk suggested a philosophy by which the doctors might combat the growing symptoms of a disease called socialism. The enthusiastic response of a large audience was indication of interest in the subject and of a most able presentation.

Many local organizations were represented as well as the Washington office of the A.M.A.

Mr. Read is available to talk to large audiences on this subject.

Members of the District Council, Presidents and Secretaries of local medical societies of the 8th Congressional District were invited for the afternoon session and dinner at the Washington Golf and Country Club.

Hill-Burton Appropriation Not Reduced

It seems that recent action taken by the United States House of Representatives does not reduce the appropriation from the Hill-Burton Fund to the Hospital Survey and Construction program.

The House adopted an amendment to the appropriation bill which leaves the appropriation at $150 million—the sum already recommended.

This should make possible the continued expansion of the hospital and health center building program throughout Virginia, including some of the funds for the proposed Negro Tuberculosis Hospital adjacent to the Medical College of Virginia in Richmond.

Grievance Committee Publicized

Some local medical societies are discussing the advisability and inadvisability of publicizing the establishing of a grievance committee.

Word from the Alexandria Medical Society is to the effect that "This committee is believed to be such an integral part of the society in relation to the community that a broadcast was arranged through a local radio station.

"The aims of the society were set forth and emphasis was placed on the fact that lay-people could be served by the Grievance Committee".

Colonial Doctor To Be Honored

Plans are under way to honor one of Virginia's early colonial physicians with the placing of an appropriate plaque in the Old Jamestown Church at Jamestown, Virginia.

It has been suggested that the Williamsburg-James City Medical Society arrange the ceremony which would be open to the public.

The unveiling ceremony might be held in connection with the Annual Celebration of the 343rd Anniversary of the town to which the members of the General Assembly of Virginia are invited.

Southeastern Regional Conference

A Southeastern Regional Conference of 8 states was held on May 13 at Raleigh, North Carolina.

This was sponsored by the Council on Medical Service of the A.M.A.

The main theme of the conference was the promotion of Pre-Payment Medical Care and Hospitalization Insurance and the extension of medical care in rural areas.

Dr. Mulholland served as general chairman for the one day conference and the following representation from Virginia were expected to attend: Dr. H. B. Mulholland of Charlottesville; Dr. John O. Boyd, Jr., of Roanoke; Dr. John C. Crawford of Norfolk; Dr. John T. T. Hundley of Lynchburg; Dr. R. C. Potter of Marion; Dr. W. R. Pretlow of Warrenton. Also Mr. Leonard O. Key of the Roanoke Surgical Care, Inc., Roanoke; Mr. J. Dunston Wingfield, Managing Director of the Tidewater Hospital Service, Norfolk and Mr. Henry S. Johnson of Richmond.

H. R. 6000

H. R. 6000 moves a step closer to passage and 800,000 regularly employed workers are to be covered. The doctors of medicine are not included in the latest version.

Also important is the fact that the section on total and permanent disability has been deleted.

XUM

MEDICAL SOCIETY OF VIRGINIA

MEDICAL SERVICE COMMITTEE

The Physician in the Rural Area.

Never before has there been so much discussion both in lay and medical circles concerning the general practitioner—particularly the practitioner in the rural areas. Very often these discussions stress the inadequacy of rural medical care, and bring up the problems of attracting and holding physicians in rural areas.

In the April MONTHLY our committee discussed the Community Health Council as the clearing house for all agencies interested in community health. The surveys of the local health council, together with its recommendations and activities, will develop a better understanding on the part of the community towards its own responsibilities with reference to all health matters in its area. Among these responsibilities might very well be the initial provision of office, equipment, and home for the rural physician.

At the National Conference on Rural Health held in 1947, certain fundamentals were outlined as necessary to attract and retain physicians in rural areas. Among these fundamentals were: (1) the provision of adequate medical facilities; (2) the provision of a reasonable income for physicians in these areas; (3) a concomitant improvement of community educational and cultural facilities; (4) the extension of good roads throughout the area.

Now the attainment of adequate medical facilities for any rural community starts with the facilities available in the doctor's office. Assuming the doctor has taken a complete history and done a complete physical examination, the confirmation of his clinical impression is attained by confirmatory laboratory work-up. For the majority of patients, the laboratory work-up need be neither extensive nor involved. However, if the doctor has to do the laboratory work himself, he usually limits it to a urinalysis and a Tahlquist hemoglobin determination. Very occasionally he will do a white count. Yet someone interested in laboratory work could undoubtedly be found in the community and trained to do complete blood counts, sedimentation rates, NPN, and blood sugars. The scope of this simple office laboratory could gradually be increased to include such other tests as the physician finds necessary. A small x-ray unit and an electrocardiograph could later be added. In questionable cases both films and tracings could be sent away for interpretation.

Facilities such as the above are impossible, however, to the physician in the rural area—especially the younger physician—unless the community itself through education and understanding of its own responsibilities towards the securing of a physician, helps finance the equipment. Arrangements could be made for the physician to buy back the equipment as he becomes established. Where there is more than one physician in a community, equipment or an office laboratory could be shared—thus cutting down on overhead.

With a set-up such as described above, and the needs of the community adequately surveyed by a local community health council, there would be no question that a reasonable income to the physician would be assured.

What are the facilities available to the physician in the rural area for continuation education? Both of our medical schools are coordinating programs of clinical conferences at the smaller hospitals once a month. Not only are cases presented by the staff for help in diagnosis and treatment, but physicians in the outlying areas are invited to bring to these conferences their own patients who present diagnostic problems. The consultant meets the physician on his own ground and the questions and discussions that ensue provide more education than many an hour spent in a formal didactic course.

It is strongly felt that if the problems of rural health were approached by methods outlined above, there would be no lack of medical care in the rural areas.

JOHN G. GRAZIANI, M.D.,
Farmville, Virginia

XUM

BOOK ANNOUNCEMENTS

Medical Management of Gastrointestinal Disorders. By GARNETT CHENEY, M. D., Clinical Professor of Medicine, Stanford University Medical School. The Year Book Publishers. Chicago, Illinois. 1950. 478 pages. Cloth. Price $6.75.

This book is published by The Year Book Publishers and apparently intended as a general practice manual. It deals chiefly with symptomatology of patients with G.I. complaints and its approach is primarily through symptomatology. It deals largely with familiarizing the student to the approach concern in dealing with patients of this nature. The scope of the book is apparently directed towards the general practitioner and symptomatic treatment. It is lacking in differential diagnosis, pathology, laboratory findings, and is not a complete text for gastroenterology even to the general practitioner. It may prove helpful to the busy general practitioner in an over-all understanding of some of the common conditions met with, but it does not appear to be either concise enough or complete enough for use as a general review text or for the use of medical students.

J. O. B.

Medicine Throughout Antiquity. By BENJAMIN LEE GORDON, M.D., Member, American Association of the History of Medicine and American Academy of Ophthalmology and Otolaryngology; Attending Ophthalmologist to Shore Memorial Hospital, Somers Point, New Jersey, and to Atlantic County Hospital for Mental Diseases, Northfield, New Jersey; etc. Foreword by Dr. Max Neuburger. Philadelphia, F. A. Davis Company, 1949. xvii-818 pages. Cloth. Price $6.00.

This work covers a period from the Stone Age until the fall of Rome in 476 A.D. The author has a very difficult task, full of pitfalls unless he has good clinical background as well as a wide knowledge of history. Fortunately Dr. Gordon has both. In the paleolithic era he has only fossils and instruments to go by. These he interprets with the aid of his knowledge of medicine as practiced by primitive peoples in our own time. After man began to make inscriptions and records in writing, the task is scarcely less difficult because terms are vague and many have lost their meaning completely. Even in the comparatively recent times of Galen, anatomical knowledge was vague and confused, to say nothing of physiology and pathology. Hippocrates, for instance, taught that both the right and left lung had three lobes, whereas Galen was equally as positive that each had only two lobes.

After a general survey of primitive medicine, the author discusses in great detail the medicine of Assyro-Babylonians, Ancient Egyptians, Ancient Hebrews, Persians, Indians, Chinese, Japanese and prehistoric Amerinds. Then follows a description of the Greco-Roman period with its many schools, philosophies, and cults. His description of Talmundic Medicine is particularly valuable as this subject is little understood. It is not essentially a medical work, but an interpretation of the Jewish law by scholars who had been scattered all over the Near East by the Roman conquest. The pathology, for instance, arose from investigation of animals to determine which were permissible as food and which were not. It was not even written in Hebrew but in Talmundic dialects. It is a collection of opinions and decisions of more than 3,000 scholars, covering a period of about 650 years. "In other words, it was an encyclopedic work embracing all matters known to antiquity."

In a way, Dr. Gordon's work is like the Talmud, it embraces all medical matters known to antiquity, but it is written by one man and it is easily accessible. It is a work that one would want to keep for handy reference.

M. P. R.

Sexual Deviations. By LOUIS S. LONDON, M. D., Diplomate, American Board of Psychiatry and Neurology, etc. And FRANK S. CAPRIO, M. D., Member, American Psychiatric Association, etc. With a Foreword by NOLAN D. C. LEWIS, M. D., Professor of Psychiatry, College of Physicians and Surgeons, Columbia University, etc. The Linacre Press, Inc. Washington, D. C. 1950. xviii-702 pages. Cloth. Price $10.00.

This book is an extremely comprehensive and informative study of the subject and should find its place among the classic works of Krafft-Ebing, Ellis, Freud and Stekel. The case histories are vivid and written in detail. The psychopathological explanations are based upon the psychoanalytic concepts of Freud. The authors emphasize their thesis that sexual deviations are not pathological entities but symptoms of underlying neuroses, are curable, and are best treated by psychoanalysis. It is worth-while reading for physicians, social workers, legal authorities, and intelligent, mature lay readers.

R. E. C.

EDITORIAL

Charles Louis Alphonse Laveran—1845-1922

THE role of disease in history and geography is a neglected field. Occasionally a great epidemic has been the subject of a painting (Elie Delaunay), more frequently the subject of a writer (DeFoe), and at rare intervals the inspiration of a great literary work (Decameron), but no study has been made of its effect on the course of history. Endemic disease has received even less attention in literary or historical writings.

Recently, we saw some magnificent ruins of Greek temples dating back to the 6th Century B.C. They were standing in startling isolation, in a deserted country side. The reason of their abandonment was not war nor conquest but malaria. The progress of this phenomenon was so insidious that we have been unable to learn the date. This is not an unique case. It has happened in other parts of Italy and elsewhere throughout the world. It was in a fair way of happening in the southern part of the United States and in the Mississippi Valley.

Although we had an empiric cure in quinine, we knew next to nothing about the cause of malaria or its prevention. For the knowledge of the etiology of the disease we are indebted to a French Army surgeon working in Algiers and to an Englishman in the Indian Medical Service. Laveran discovered the parasites of malarial fever in 1880, and 17 years later, Sir Ronald Ross, the Laveran plasmodia in the stomach wall of the Anopheles mosquito which had fed on the blood of malarial patients. These bodies had been seen in the red blood cells previously but were looked upon as artefacts. When Laveran saw the actively moving filaments he knew they were parasites, and surmised that they were the cause of malarial fever. He worked out the life cycle in the human being and suggested that there was an intermediate host. This was by no means Laveran's only discovery. He continued his investigations in various fields. He classified the hematozoa and established a new science, that of protozoology. He has been called the father of protozoan pathology.

Laveran was born in Paris, June 16, 1845 and graduated in medicine at Strassburg in 1867. His father was Professor of Epidemics and Diseases of Armies and also Director of the Val-de-Grâce Military Hospital. Laveran, upon his return from Algiers, held the same chair. In 1907, having obtained his release from the Army, he became Director of the Honorary Service of the Pasteur Institute and founded the "Societé de Pathologie Exotique", the presidency of which he held for twelve years. In 1907 he was awarded the Nobel Prize in medicine, and with this money he established the laboratory of Tropical Medicine in Rue Falguière. Laveran was a member of every scientific academy in France and in 1907 he received an honorary degree from the University of Liverpool.

In connection with the celebration of the centenary of the French conquest of Algiers, a monument to his memory was erected at Constantine. A bronze medallion of Laveran was unveiled in the Val-de-Grâce Military School and the little square in front of Val-de-Grâce was given his name.

Laveran had a number of devoted pupils and was blessed with a wife who understood her position as wife of a great scientist and devoted herself to making his long life a happy one.

This is the 13th of a series of "Doctors for whom the public should be thankful."

XUM

The American Social Hygiene Association

THE presence of venereal disease is a sad commentary on human nature. That syphilis still ranks high among the causes of death is not generally known. Theoretically, it has all, or almost all, the factors that make a disease easy to control. In the first place, there are simple and accurate laboratory diagnostic tests. The causative organisms can be seen by dark field examinations of the initial lesion. Furthermore, its presence in the system can be demonstrated by a number of tried and proven serological tests. In the second place, there are efficient prophylactic methods that an individual may use at or shortly after exposure, either in the shape of a local application or medicine to be taken by mouth. Thirdly, there are quick cures. The first announcement of arsphenamine stated that a single intravenous dose would kill the spirocheta pallida in the entire system. Since then, each new cure has been heralded by similar statements. Experience has shown that such statements are not entirely accurate. Nevertheless it is true that any of the new cures render the patient noninfectious in a remarkably short time. It is also true that the patient can be cured if he can be kept under observation long enough. The question is how much and how long must the treatment be kept up to effect a permanent cure.

The weak point in the campaign to eradicate syphilis is that it is a painless disease at least in its first and early second stages. In a recent discussion by Dr. W. W. Aufranc, it was stated that in 1949 one hundred and fifty thousand persons were infected, and of these 80,000 cases went undiscovered. Six thousand were sent to mental institutions on account of syphilis, 14,000 children were infected prenatally and 13,000 persons died of the disease. If the entire population of the United States were tested serologically, 3,000,000 would be found to have a positive reaction.

Not only is syphilis prevalent but it seems to be on the increase. In Richmond, the death rate per 100,000 population in 1948 was 8.0 and in 1949 it was 9.2. It was tenth among all causes of death in each year. But syphilis is not all the problem. Gonorrhoea is even more prevalent than syphilis, although it is not as great a hazard to the public health. In the first place, it is an acute self-limited disease and in the second place, it has fewer serious complications. The painful onset drives the male to seek treatment early. Unfortunately, the female may harbor gonococci without having any symptoms. However, she is more apt to have late sequelae, such as arthritis or heart disease. All too frequently she has a salpingitis and thus a youthful indiscretion may jeopardize her chances of ever having a baby. Gonorrhoea is easily cured. A single injection of penicillin will usually cure it. This, however, is not without its disadvantages. Already, syphilographers are complaining that these "single shots" are obscuring the recognition of a simultaneously acquired but more slowly developing luetic infection. A factor in the spread of venereal disease is the vicious bit of folklore to the effect that coitus with a virgin is the best cure for gonorrhoea. This untruth is widely believed by negroes and ignorant people.

There are still other venereal diseases—chancroid, lymphogranuloma inguinale and condyloma acuminatum—but they produce no new problems of prevention. One would think that their presence would discourage intercourse, but evidently this is not so, for one sees them in prenatal clinics.

Thus we see human nature, ignorance, folklore and superstition all combine with venereal diseases against the health and happiness of the people. Even "literature" is on their side. Lord Chesterfield's description of the sex act, i.e., "The position is ridiculous, the pleasure is momentary and withal it is very expensive" is practically unknown, whereas the writers of the modern best sellers spend hours dreaming up new

adjectives to describe the ecstasies of their heroines. Many of their readers are driven to consult their gynecologists because they feel cheated and think they are abnormal. The truth must be told.

The health departments are actively concerned. They maintain clinics for the diagnosis and treatment of venereal diseases and supply penicillin for treatment by private physicians. The great problem, however, is case finding. For this, the cooperation of the public is needed. The public must be "sold" on the idea that the problem is its problem. The public must be shown that more than one half of the new cases are boys and girls in their teens and early twenties, who must be taught a sound attitude toward sex conduct. The American Hygiene Association, an outstanding private agency, has such a program of education. It needs your support. The Richmond Social Hygiene Committee is composed of the following well known persons:

Dr. Thomas Murrell, Dr. William T. Sanger, Monsignor Leo J. Ryan, Bishop H. St. George Tucker, Mrs. Jacob Cohn, Dr. Lonsdale J. Roper, Mr. Robert Henley, Mr. Rice M. Youell, Dr. Emily Gardner, Dr. Raymond Kimbrough and Dr. Wyndham B. Blanton, Chairman. Make your check payable to the American Social Hygiene Association and send it to the Chairman of the Richmond Committee.

"The G.P."

IN less than three years the American Academy of General Practice has risen to a place of prominence which ranks it with the three greatest medical organizations in America. With a dues paying membership of over 15,000 and growing steadily at a rate of 100 new applicants each week, it is expected that within a few months, it will be second only to the A.M.A. in numerical strength.

In this short period of time it has selected a national executive secretary who, with the aid of a capable staff, has accomplished the phenomenal. The two annual scientific assemblies have attracted universal attention from medical circles both for the numerical attendance and program substance. Now, perhaps the crowning achievement of its organization is the birth of the "G.P." Journal which entered the field with its April issue. Many competent authorities, including national advertising agencies, consider this journal is destined to become the most informative medical journal in America for its members.

Just as the first issue was ready for the press, its editor, Dr. Kenneth Albrecht, met a sudden, accidental death. But, like all apparent set-backs this young organization has experienced, sympathetic cooperation from a powerful source was on hand. Dr. Walter Alvarez, one of the greatest names of all time in American medical history, immediately accepted the challenge and is now the new Editor-in-Chief. He is resigning from the Mayo Clinic this year and will make his home in Chicago where he will direct the destiny of this new journal. Although 65 years old, he is full of enthusiasm and a genuine friend of the family doctor. In accepting he stated, "I have a strong desire to spend what years are left to me to get knowledge quickly from the laboratories and the specialists, into the hands of the practitioner. I want the new G.P. magazine to be full of exactly the information the family doctor wants. The job of the 'G.P.' is to pass on the new things to the men on the firing line in practice."

The advisory board of the editorial staff is made up of about 300 of the most outstanding names in American medicine in the 27 various fields of specialty which they represent.

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The feature articles and various departments of the first issue, in accord with an established editorial policy for all future issues, are short, concise, and written well to the point on subjects of momentous interest and importance to all general practitioners.

Typical of the comments of the laity are those of Dr. Ian Stevenson, writing in the May issue of *Harper's Magazine*. "There is need for a new medical journal dedicated not to the competitive publication of isolated chips of information, but to the broad understanding of disease."

It will be distributed monthly not only to its 15,000 members, but to medical schools and libraries of all lands.

E. E. HADDOCK

SOCIETY PROCEEDINGS

The Patrick-Henry Medical Society

Held its regular quarterly meeting on April 14 at the Martinsville General Hospital, with Dr. John R. Clark, president, in the chair. There was an attendance of twenty-three. There was considerable discussion of the payment of A.M.A. dues and motion was made to defer action on this until further information was obtained.

In accordance with request made by the Medical Society of Virginia, a Grievance Committee was appointed with Dr. W. N. Thompson as chairman, and Drs. T. H. Dickerson and Henkel Price as the other members.

Upon the completion of these and several other business matters, Dr. J. A. Ravenel introduced the guest speaker, Dr. J. O. Williams, associate in pathology at the Bowman-Gray School of Medicine, who discussed the pathological findings in the case presented at the clinical pathological conference. Mr. B. D. Marton, Jr., medical photographer at the Bowman-Gray School, assisted Dr. Williams in presenting colored slides during the discussion.

J. W. CLARK,
Secretary

Roanoke Academy of Medicine.

At the regular meeting of the Academy on May 1, the following were elected for the coming year and will take office at the October meeting: President, Dr. E. G. Gill; vice-presidents, Dr. Ira H. Hurt and Dr. George S. Bourne; and secretary, Dr. Samuel F. Driver. Dr. W. W. S. Butler and Dr. Henry Lee were elected to fill two vacancies in the Executive Committee, and Dr. John Gardner and Dr. Garrett Gooch, III, to vacancies on the Judiciary Committee. Delegates elected to represent the Academy at the Roanoke meeting of the State Society are: Drs. Frank A. Farmer, Charles H. Peterson, Marcellus A. Johnson, Jr., C. T. Burton, John O. Boyd, Sr., and Harry B. Stone, Jr.

Dr. Marcellus A. Johnson, Jr., and Dr. William H. Kaufman are the retiring president and secretary, respectively.

The Wise County Medical Society

Met at the Hotel Norton on the evening of April 12, and twenty members enjoyed a "Dutch Country Ham" dinner.

The application for membership was received from Dr. J. A. Pettigrew of Dunbar. It was approved by the Board of Censors and will lie on the table until our next meeting.

Resolutions were adopted on Drs. Harshbarger and Baker (published under Obituaries).

The society voted that hereafter at our meetings we will have only one special speaker.

Dr. Roy M. Hoover of Roanoke gave an authoritative lecture on fractures and their treatment. This was one of the best presentations we have had and was followed by a question and answer period.

W. B. BARTON, *President*
J. D. CULBERTSON, *Secretary*

Northampton County Medical Society.

At the dinner meeting of this Society on April 20, at Eastville Inn, Dr. S. K. Ames spoke on "Parenteral Fluid Therapy" and stressed the importance of the potassium ion in treatment of the debilitated.

He showed by chart the normal ionic content of the various body fluids, and outlined the relative importance of each in various conditions that result in depletions.

At the business session Dr. J. R. Mapp was elected delegate to the next convention of the Medical Society of Virginia in Roanoke in October, and Dr. S. K. Ames was elected as alternate delegate. There followed a discussion of routine business. The Society is strongly supporting the American Medical Association in the fight against Socialism.

Dr. W. C. Henderson is president of the Society, and Dr. John R. Mapp, secretary. Others present included, also, Drs. Robertson, Jackson, Lynch, Sturgis, Jr., and Denoon.

Northern Virginia Clinical Assembly.

The Alexandria Medical Society held its first annual clinical assembly in that city on Sunday, April the 16th. An excellent program included the following discussions:

IMMEDIATE TREATMENT OF FRACTURES—Custis Lee Hall, M.D., George Washington University.

VAGINAL BLEEDING—J. Mason Hundley, Jr., M.D., University of Maryland.

CLINICAL APPLICATION OF THE NEWER ANTIBIOTICS AND THEIR LIMITATIONS—Theodore E. Woodward, M.D., University of Maryland.

PEDIATRIC EMERGENCIES—Alexander J. Schaffer, M.D., Johns Hopkins University.

ACUTE SURGICAL ABDOMEN—Robert J. Coffey, M.D., Georgetown University School of Medicine.

PSYCHIATRIC EMERGENCIES AND WHAT THE MEDICAL MAN CAN DO—Harvey J. Tompkins, M.D., Veterans Administration.

TREATMENT OF DUODENAL ULCER—J. Edward Berk, M.D., Temple University School of Medicine.

ACUTE CARDIAC EMERGENCIES—Sidney Scherelis, M.D., Johns Hopkins University.

A small registration fee included the clinical session, the physicians' luncheon and the cocktail party in the evening. There were ninety-three registrants and all felt the assembly was quite a success. Dr. Milton R. Stein was chairman.

NEWS

Scientific Exhibits.

Very excellent and ample space for the Scientific Exhibits at the Hotel Roanoke has been assigned to the Exhibit Committee. The same decorating firm which furnished the booths last year will again service us. Those who saw the exhibits last year will remember the same equipment is furnished as is used at the A. M. A. Viewing boxes for transparencies are also furnished which are fitted with fluorescent lights.

In order to secure desirable space, all exhibitors are requested to write the Chairman of the Scientific Exhibit Committee, Charles H. Peterson, M.D., 603 Medical Arts Building, Roanoke, Va., for application blanks as soon as possible. This will enable the committee to "block out" the space more efficiently.

Dr. Sanger Honored.

Dr. William T. Sanger, president of the Medical College of Virginia, Richmond, was honored at a program April 27 at the college on the occasion of his 25th year as president of the college. Climaxing a program of tributes Doctor Sanger was given a new car by the faculty, students and personnel of the college and presented a silver bowl by the college's Board of Visitors. Robert T. Barton, Jr., chairman of the Board of Visitors, presided at the program. Those paying tributes to Doctor Sanger were: Governor John Stewart Battle of Virginia, Mayor W. Stirling King of Richmond, Dr. L. J. Roper, commissioner of the Virginia State Health Department, Dr. George M. Modlin, president of the University of Richmond, Dr. Harry L. Claud, an alumnus, Dean Harvey B. Haag of the College's School of Medicine and Wyndham B. Blanton, Jr., president of the student body of the college.

During this period there has been a considerable increase in the enrollment of students and enlargement of the faculty, the hospital division has greatly expanded and noteworthy progress is indicated by the fact that money for research when Dr. Sanger became the college's president was negligible and today amounts to $343,356.50, and gifts, grants and bequests were negligible in 1925 but these last year amounted to $432,563.96. The principal of endowment and trust funds was $13,265.00 in 1925 and today it is $3,200,000.00 Buildings have increased from six to 23 and the value of the physical plant and equipment from $374,,476.88 to $6,000,000.00.

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Dr. Sanger said that among the projects he was impatient to start are a new dental building, the remodeling of another building to care for the chronically ill, a building to house the college's research activities and more dormitory facilities for students.

Dr. H. Cowles Rucker Honored.

Dr. Rucker was honored on April the 29th by three hundred people of Powhatan, Amelia and Chesterfield Counties in recognition of his thirty years of service among them. Dr. James L. Hamner of Mannboro and Judge J. G. Jefferson of Amelia were among those who participated in the ceremony at which time Dr. Rucker was presented with a gold watch and chain and a purse of money. The watch bore the inscription "He went about doing good." Dr. Rucker, a native of Amherst County, graduated in Washington, D. C., and practiced in Wise County before locating in Amelia in 1920.

Dr. Vincent W. Archer,

Head of the Department of Roentgenology at the University of Virginia, will attend the Sixth International Congress of Radiology in London, July 22-26, where he will have a scientific exhibit and present a paper. Mrs. Archer will accompany him.

Post Graduate Symposium on Anesthesiology.

The Department of Anesthesiology of the University of Pittsburgh School of Medicine announces a Post Graduate symposium on the Basic Sciences Related to Anesthesiology in cooperation with several local hospitals. The course will be held from June 19 to June 23, and the registration fee is $25.00. This course will be limited to thirty participants.

Registration and full particulars should be obtained from Chairman of the Committee on Graduate Medical Education, University of Pittsburgh School of Medicine, Pittsburgh.

The Virginia Obstetrical and Gynecological Society

Had its 1950 Spring Travel Clinic in New Orleans in April. For the first time the members took their wives and, in addition to an excellent program, time was allowed for sight seeing. On the first day the program was in charge of Department of Obstetrics and Gynecology of the Louisiana State University Medical School and, on the second day, the Department of Obstetrics and Gynecology of Tulane University presented the program. On both days operative clinics were held in the mornings and papers were given in the afternoon. Social features added to the enjoyment of the visitors. Those registered were: Dr. and Mrs. Harvey G. Bland, Dr. and Mrs. Chester D. Bradley and Dr. and Mrs. Waverly R. Payne of Newport News; Dr. and Mrs. M. H. Bland and Dr. and Mrs. William E. Byrd of Norfolk; Dr. and Mrs. Mercer Neale, Heathsville; Dr. Sam Oglesby, Dr. and Mrs. John R. Saunders, Dr. and Mrs. Joseph E. Warren and Dr. A. D. F. White of Lynchburg; Dr. and Mrs. James Parrish, Portsmouth; Dr. and Mrs. Joseph C. Parker, Dr. and Mrs. Edwin M. Rucker, Dr. and Mrs. Spotswood Robins, Dr. and Mrs. Henry C. Spalding, Dr. L. L. Shamburger and Dr. and Mrs. H. Hudnall Ware, Jr., of Richmond; Dr. and Mrs. George Speck, Arlington; Dr. and Mrs. William N. Thornton, Charlottesville; Dr. and Mrs. William D. Varner, Franklin; Dr. and Mrs. C. F. Beckert, Gadsden, Ala., and Dr. E. W. McCauley, Bluefield, W. Va.

Memorial Guidance Clinic.

At the annual meeting of the Clinic in Richmond, held recently, Dr. Rex Blankinship was elected president of the board of directors, and Dr. William H. Kelly remains director and secretary of the board. Dr. W. T. Thompson, Jr., and Dr. R. C. Longan were elected members of the board for a term of three years. Other doctors on the board are Dr. Manfred Call, III, Dr. H. W. Decker, Dr. Howard R. Masters, Dr. C. L. Outland and Dr. R. D. Garcin, Sr.

Dr. Victor C. Vaughan, III,

A native of Richmond and a son of the late Dr. Warren T. Vaughan of this city, has been appointed as an assistant professor in the department of pediatrics at the Yale University School of Medicine, New Haven, Connecticut.

Lt. Col. George R. Carpenter,

Formerly connected with the State Health Department and engaged in health work in Virginia before entering the army in 1942, has been named surgeon of the Berlin, Germany, military post.

Dr. R. Finley Gayle, Jr.,

Richmond, was elected secretary of the American Psychiatric Association at its meeting in Detroit, Michigan, the first week in May.

The Virginia Society of Anesthesiologists,

Which was organized in January of this year, has received a charter as a component society of the American Society of Anesthesiologists, Inc. The aims of this Society are to advance the science and art of anesthesiology and to stimulate interest and promote progress in the various aspects of the specialty—scientific, cultural, and economic. Officers for the present year are: President, Dr. Thomas Walker, Richmond; Vice-President, Dr. Alden W. Squires, Norfolk; Secretary-Treasurer, Dr. Harold F. Chase, Charlottesville.

A luncheon meeting of the Society will be held at Roanoke on October 10, concurrent with the meeting of the Medical Society of Virginia. All physicians practicing anesthesia on a full or part-time basis are invited to participate in the activities of the Society.

All physicians in Virginia who do full or part-time Anesthesia, or who are interested in Anesthesia, are asked to contact B. H. Libien, M.D. at Riverside Hospital, Newport News, chairman of the Membership Committee. They wish to set forth to you the advantages of membership in the Virginia Society of Anesthesiologists, which is a component unit of the American Society of Anesthesiologists, Inc.

Medical Illustrators' Directory Available.

The Directory issue of GRAPHICS, the official publication of the Association of Medical Illustrators, contains the name, address, training, professional experience and reference to major published work of each member. Other information pertaining to the profession is included.

The journal, to be issued on June first, will be available to those requiring medical illustration service, and will be sent, free of charge, upon request to the Editor, Miss Helen Lorraine, 5212 Sylvan Road, Richmond 25, Va.

News from University of Virginia, Department of Medicine.

Recent visiting lecturers at the University of Virginia Department of Medicine were:

Dr. Howard C. Taylor, Jr., Columbia University. Subject: Psychosomatic Disorders in Gynecology. Dr. Taylor's lecture was the second in a series of Tiffany Williams Memorial Lectures, established last year by former residents of the University Hospital who had served under the late Dr. Williams, Chairman of the Department of Obstetrics and Gynecology.

Dr. Stanley E. Bradley, Jr., Columbia University. Subject: Renal Adaptations to Medical and Surgical Stresses.

Dr. Frank B. Walsh, Johns Hopkins University. Subject: Ocular Signs of Myasthenia Gravis and Other Systemic Diseases.

Dr. Winchell Craig, The Mayo Clinic. Subject: Intraspinal Tumors and Their Relation to General Diagnosis.

Dr. Edwin P. Lehman, Chairman of the Department of Surgery and Gynecology, University of Virginia Hospital, and past president of the American Cancer Society, was presented the American Cancer Society's 1950 medal for his work in the control of Cancer.

The following were elected to membership in the Virginia Chapter of the Society of the Sigma Xi at a meeting on March 28th.

Dr. Kenneth R. Crispell, Instructor in Internal Medicine

Dr. Richard Finley Grise, Fellow in Surgical Pathology

Dr. Glenn C. Hall, Jr., Instructor in Pharmacology

Mr. Desmond Gourley, Research Assistant in Pharmacology

Mr. James G. Hilton, Research Assistant in Pharmacology

Associates: Paul S. Derian, C. Randolph French, W. M. Hall, III, Robert S. Harris.

The following papers were presented at a meeting of the Federation Societies of the Pharmacological Society in Atlantic City by members of the Department of Pharmacology, University of Va. Medical School (April 17-21).

The Effects of Mercurial Compounds on Saccharase—by C. L. Gemmill and E. M. Bowman.

Effect of Temperature on Uptake of Radioactive Phosphate by Human Erythrocytes—C. L. Gemmill and Desmond R. H. Gourley.

The Use of Thermistors in Twin Calorimetry for Enzyme Reactions—by F. C. Holler, D. Venable and C. L. Gemmill.

Effect of *d*-and *l*-Methadone on Blood Glucose and Lactate of Dog—by D. T. Watts.

A Study of Digitoxin in Blood—James G. Hilton.

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Congress in Ophthalmology and Otolaryngology.

The twenty-third annual Spring Congress of Gill Memorial Eye, Ear and Throat Hospital, had an attendance of 250 doctors from forty states and three foreign countries. Among the honored guest speakers were Dr. C. W. Mayo, professor of Surgery at the Mayo Clinic, Rochester, Minn., and Sir Alexander Fleming, the discoverer of Penicillin, London, England.

The Twenty-fourth Congress will be held in Roanoke from April 2 to 7, 1951.

Dr. Charles H. Lupton

Announces the resumption of the practice of general surgery, with offices at 405 Medical Arts Building, Norfolk.

The Jefferson Medical College,

Seventh in age of the country's medical schools, is giving special attention to the celebration of its 125th anniversary in the period from May 25th until after commencement on June 9th. This school has had a splendid record and throughout its history has conferred the Doctor of Medicine degree upon nearly 19,000 graduates of whom more than 6,000 are living.

Dr. Lewis E. Mangus,

Formerly of Harrisonburg who has recently completed a residency in Washington, has relocated in Virginia and is now in charge of the department of Anesthesiology of the Alexandria Hospital.

Dr. J. Lawson Cabaniss,

Roanoke, was elected a fellow of the American Academy of Ophthalmology and Otolaryngology during the October 1949 meeting held in Chicago.

The Neuropsychiatric Society of Virginia

Held its Spring meeting on March 31 at the Williamsburg (Va.) Inn, at which the following papers were presented:

Release of Repressed Memory by Reversalization by Dr. Eleanor Beamer-Maxwell;

The Evil Eye by Dr. James B. Funkhouser

Early Observation in the Use of Antabuse in the Treatment of Alcoholism by Dr. Merritt W. Foster.

The following new officers were elected: President, Dr. James K. Morrow, Radford; vice-president, Dr. R. C. Longan, Richmond; and secretary-treasurer, Dr. J. B. Funkhouser, Richmond.

News From State Health Department.

Dr. R. B. Wissinger has resigned effective May 1. He was Health Officer in the Alleghany-Botetourt Health District with headquarters at Covington.

Dr. Leroy Soper has resigned as Health Officer in Pittsylvania County. This resignation became effective May 12.

Dr. Stuart S. Bray resigned his position as Health Officer in the Buchanan-Tazewell Health District on April 15.

The Virginia State Health Workers Conference will be held in Roanoke, Virginia on June 7, 8 and 9.

International Academy of Proctology.

The second annual convention of the Academy will be held at the Bellevue Hotel in San Francisco, California, June 23, 24, for which an excellent scientific program has been arranged. The annual banquet of the Academy will take place on Friday evening, the 23rd.

Further information concerning the convention and a copy of the program may be obtained by writing to the Secretary, Dr. Alfred J. Cantor, International Academy of Proctology, 43-55 Kissena Blvd., Flushing, N. Y.

Medical College of Virginia News.

Dr. James D. Hagood and Rear Admiral Lewis L. Strauss will be awarded honorary degrees at the 113th Commencement program of the Medical College of Virginia on June 6 this year.

Doctor Hagood will be awarded a master of science degree in general medicine. This is a new degree established by the college to give recognition to the importance of the general practice phase of medicine.

Doctor Hagood was chosen by the college as the first recipient of the degree because he is an outstanding alumnus of the college, an outstanding general practitioner who has been honored by his profession and has served with distinction in the Virginia Senate. He is widely esteemed and greatly beloved throughout a large area of Southside Virginia. He was selected Virginia practitioner of the year 1948 and is now president of the Virginia Academy of General Practice.

At a recent meeting of the Council of Presidents of State-supported Schools, Dr. W. T. Sanger, presi-

dent of MCV, was named chairman of the group. These presidents meet bimonthly to plan in the interest of their respective schools and to coordinate the activities of their schools for greater efficiency and economy.

Dr. Lucy Scott Hill has been named to the teaching staff of the college in the Department of Psychiatry. Dr. Hill was graduated from the Medical College of Virginia in 1924. Her work will be limited primarily to child psychiatry.

Dr. Hill, who has already reported for work, came to her new position from the Fairfax County Child Guidance Clinic where she was child psychiatrist.

She previously was director of Sara T. Mayo Psychiatric Clinic in New Orleans, and also was on the staffs of Charity Hospital, Hotel Dieu, Lakeshore Hospital and DePaul Sanitarium, all in New Orleans.

With the addition of Dr. Hill to the Department of Psychiatry, MCV expects to broaden its service in its program of psychiatry for children.

Course in Medical Mycology.

A month's course in Medical Mycology, under the direction of Dr. Norman F. Conant, is to be offered at Duke University School of Medicine and Duke Hospital, Durham, N. C., July 3-July 29, 1950. The course will be offered every day in the week, except Sunday, and has been designed to insure a working knowledge of the human pathogenic fungi within the time allotted. The number of applicants for the course will be limited.

A fee will be charged for this course, upon the completion of which a suitable certificate will be awarded. Please direct inquiries to Dr. Norman F. Conant, Professor of Mycology, Duke University School of Medicine, Durham, N. C.

International Congress on Diseases of the Chest.

The first international congress of this association will be held at Carlo Forlanini Institute, Rome, Italy, September 17-22. More than one hundred subjects will be presented. Detailed information may be obtained from Murray Kornfeld, executive secretary, American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.

The Western Association of Industrial Physicians and Surgeons

Invites all American Medical Association members to attend its meeting on Sunday, June 25th—day prior to the opening of the A. M. A. convention—from 9:00 A.M. to 5:00 P.M., in the Curran Theater, 455 Geary Street, San Francisco. An excellent program has been arranged.

The American Gynecological Society

Held an excellent meeting at The Greenbrier, White Sulphur Springs, West Virginia, May 11, 12 and 13, under the presidency of Dr. Joseph L. Baer of Chicago. There was an attendance of 212 members, guests and ladies, including thirty foreign guests. Dr. Frederick Irving of Boston was elected president for the coming year, with Dr. Edward L. King of New Orleans and Dr. Otto Schwartz of St. Louis as vice-presidents. Dr. Norman F. Miller of Ann Arbor was re-elected secretary and Dr. Robert Kimbrough, Jr., of Philadelphia, secretary.

The Diamond Anniversary meeting of the founding of the Society will be at the Waldorf Astoria Hotel in New York in May 1951.

New Books.

The following are some of the newer books placed in the Library of the Medical College of Virginia, Richmond, which are available to our readers under usual library rules:

Bockus—Postgraduate gastroenterology.
Boyce—Acute appendicitis.
Cheney—Medical management of gastrointestinal disorders.
Comroe, ed.—Methods in medical research. 1950.
Doyle—Handbook of obstetrics and diagnostic gynecology.
Einstein—Out of my later years.
Einstein—The world as I see it.
Fister—Manual of standardized procedures for spectrophotometric chemistry.
Franklin—Cardiovascular studies.
Gariepy—Saw-Ge—Mah (Medicine man).
Harris—Brucellosis. 2nd edition.
London—Sexual deviations.
Progress in clinical endocrinology. 1950.
Stieglitz—Geriatric medicine. 2nd edition.
Wolff—Electrocardiography.

Office Space Available.

Office space is available for two doctors in the corner building at 932 West Franklin Street, Richmond. Call 4-3380. (*Adv.*)

XUM

OBITUARIES

Dr. Frank Nicholson Mallory,

Dean of the medical profession in Brunswick County, died at his home in Lawrenceville on April 20th, after a long illness. He was sixty-nine years of age, a graduate in medicine from the Medical College of Virginia in 1906, and had been a member of the Medical Society of Virginia since that year. He was for a term president of the former Southside Medical Association and was coroner of Brunswick County for thirty-two years. He retired in 1949 after a practice of 41 years. His wife and three daughters survive him.

Dr. Edgar Lemon Sutherland,

An eye, ear and nose specialist of Lynchburg, was injured fatally on the morning of April 30th at the home of a sister in Willis when, while he was standing in the driveway, a rolling automobile pinned him against a building. Dr. Sutherland was a graduate of the University of Virginia in 1898 and had been a member of the Medical Society of Virginia since 1906. He was made a member of the "Fifty Year Club" of the Society at its 1948 meeting. He is survived by four sisters, his wife having died several years ago.

Dr. John Brooks Tuttle.

We have just learned of the death of Dr. Tuttle on September the 12th, 1949. He was seventy-one years of age and a graduate of the University of Virginia in 1896. He had been affiliated with the Medical Society of Virginia since 1902 and was a member of its "Fifty Year Club".

Dr. Herbert Grasty Dickie,

Of Roseland, died May the 7th at the age of 66. He was a graduate in medicine of the University of Virginia in 1907 and served his internship at Bellevue Hospital, New York. After practicing in several places, he returned to his home county in 1917 where he had since practiced. He was a Shriner and thirty-second degree Mason. He is survived by his wife and three children.

Dr. E. W. P. Downing.

At the regular quarterly meeting of the Northampton County Medical Societly held April 20, 1950, the following resolution was adopted:

BE IT RESOLVED that in the death of Dr. E. W. P. Downing, the Society has lost a most competent and faithful doctor and a friend to the public, who administered to them day or night for the past fifty years.

IT IS FURTHER RESOLVED that a copy of this be sent to the VIRGINIA MEDICAL MONTHLY, and to his family, and be recorded in the minutes of this Society.

Northampton County Medical Society
J. M. LYNCH
J. GATES GOODE
SHEPPARD K. AMES

Resolutions.

The Wise County Medical Society, at its meeting on April the 6th, adopted the following resolutions on the deaths of Dr. Harshbarger and Dr. Baker:

DR. CHARLES L. HARSHBARGER

Coronary occlusion ended the brilliant eighteen-year career of Dr. Charles Lester Harshbarger on February 21, 1950. No doctor within our knowledge has done more in our section in such a short time.

Our society gave him every honor within our power. For many years he was our secretary, then on the Board of Censors, and at his death was President.

He was a gentleman; a statesman in medicine; a surgeon of ability, and a friend of his fellowmen.

The Supreme Architect of the universe has promoted him we feel sure.

We feel our loss. Our hearts go out in sympathy to the fine widow and daughter he left.

ROBERT JONES
T. J. TUDOR

DR. WILLIAM AUGUSTUS BAKER

The Dean of our group, William Augustus Baker, age 87, passed away at his home at Big Stone Gap, on February 7, 1950. Two years ago he became a member of the "Fifty Year Club" of the Medical Society of Virginia.

For many years he was a horseback doctor and rode fine horses, and he responded to calls over a wide area, and in the colds of the mountains.

He had a fine pleasing personality, a high regard for ethics, and brought to his clientele the most up-to-date professional services of the general practician of his day.

Only four of the doctors who worked with him in the early horseback days still survive and only three of them are in active practice.

We bow in humble submission to the will of Him who doeth all things well and we shall remember fondly this good doctor who has gone on to be with the great doctor, St. Luke, and a host of others.

FRANK HANDY
T. J. TUDOR